

1996 AIAA Journal Index

How to Use the Index

In the Subject Index, pages 2651–2662, each technical paper is listed under a maximum of three appropriate headings. Note the number in boldface type following each paper title, and use that number to locate the paper in the Chronological Index. The Author Index, pages 2662–2665, lists all authors associated with a given technical paper. The locating numbers are identical to those in the Subject Index. The Chronological Index, pages 2666–2680, lists all papers by their unique code numbers. This listing contains titles, authors and their affiliations, and volume, issue number, and page where the paper appeared. It also gives the AIAA paper number, if any, on which the article was based, as well as the "CP" or conference volume number if the paper was published in a bound collection of meetings papers. Comments, Replies, and Errata are listed directly beneath the paper to which they refer. If the paper to which they refer was published prior to 1996, that paper also will appear in the Chronological Index. Authors of Comments also are listed in the Author Index. The Book Review Index, page 2680, lists the books reviewed during 1996, the author, publisher, reviewer, and the issue, number, and page on which the review appeared.

Subject Index

Aircraft Technology, Conventional, STOL/VTOL

Aerodynamics

Reynolds Number Effects on the Prediction of Velocity Profile in Compressible Flows

J93-252

Comment on "Rise of Total Pressure in Frictional Flow"

J95-119

Reply by the Author to B. W. van Oudheusden

J95-119

Flap-Lag-Torsion Stability in Hover and Forward Flight with Three-Dimensional Wake

J96-002

Improving Curved Subsonic Diffuser Performance with Vortex Generators

J96-008

Boundary-Layer-Tripping Studies of Compressible Dynamic Stall Flow

J96-013

Use of a Wake-Integral Method for Computational Drag Analysis

J96-026

Calibration of Preston Tubes

J96-034

Infeasible Path Optimal Design Methods with Applications to Aerodynamic Shape Optimization

J96-037

Impulsive Start of a Symmetric Airfoil at High Angle of Attack

J96-038

Skin-Friction Measurements and Calculations on a Lifting Airfoil

J96-039

Using High-Order Accurate Essentially Non-oscillatory Schemes for Aeroacoustic Applications

J96-041

Hybrid Prismatic/Tetrahedral Grid Generation for Viscous Flows Around Complex Geometries

J96-047

Investigation of High-Order Upwinded Differencing for Vortex Convection

J96-052

Oblique-Shock/Expansion-Fan Interaction—Analytical Solution

J96-065

Influence of Surface Flow on Aerodynamic Loads of a Cantilever Wing

J96-082

Perspective on Unstructured Grid Flow Solvers

J96-083

Flow Control over a Maneuvering Delta Wing at High Angles of Attack

J96-104

Viscous Drag Reduction Using Riblets on NACA 0012 Airfoil to Moderate Incidence

J96-106

Adaptive Prismatic-Tetrahedral Grid Refinement and Redistribution for Viscous Flows

J96-110

Simulation of Multiple Shock-Shock Interference Patterns on a Cylindrical Leading Edge

J96-117

Genetic Optimization of Target Pressure Distributions for Inverse Design Methods

J96-139

Turbulent Boundary Layer in an Adverse Pressure Gradient: Effectiveness of Riblets

J96-146

Interaction of Missile Nose-Tip Vortices with a Control Surface

J96-155

Transonic Equivalence Rule Involving Lift and Shocks

J96-170

Parametric Effects on Lift Force of an Airfoil in Unsteady Freestream

J96-172

Automatic Grid Generation and Flow Solution for Complex Geometries

J96-177

Stability of Leading-Edge Vortex Pair on a Slender Delta Wing

J96-186

Simulating Moth Wing Aerodynamics: Towards the Development of Flapping-Wing Technology

J96-212

Performance of Three-Dimensional Compressible Navier-Stokes Codes at Low Mach Numbers

J96-213

Trailing-Edge Jet Control of Leading-Edge Vortices of a Delta Wing

J96-225

Eigenmode Analysis in Unsteady Aerodynamics: Reduced-Order Models

J96-244

Multiaxis Fluidic Thrust Vector Control of a Supersonic Jet Using Counterflow

J96-266

Momentum and Vortex Theory of Rotor Blade Wakes

J96-269

Flow Visualization of an Oscillating Airfoil with Sawtooth Trailing Edge

J96-272

Vortex-Wake Characteristics of a Supersonic Transport Wing Planform at Mach 2.5

J96-273

Three-Dimensional Aerodynamic Shape Optimization Using Discrete Sensitivity Analysis

J96-275

Pseudotime Method for Shape Design of Euler Flows

J96-281

Interaction of Supersonic Wing-Tip Vortices with a Normal Shock

J96-288

Aerodynamic Lift at Reynolds Numbers Below 7×10^4

J96-299

Enhancement of the Leading-Edge Separation Vortices by Trailing-Edge Lateral Blowing

J96-300

Boundary-Layer Transition Due to Isolated Three-Dimensional Roughness on Airfoil Leading Edge

J96-303

Counter-Rotating Structures over a Delta Wing

J96-307

Effect of Fences on Airfoil Aerodynamics at -90° Degree Incidence

J96-313

Unsteady Flow Calculations with a Multigrid Navier-Stokes Method

J96-321

Interaction of Swept and Unswept Normal Shock Waves with Boundary Layers

J96-327

Multiple-Actuator Control of Vortex Breakdown on a Pitching Delta Wing

J96-339

Numerical Simulation of Viscous Flow over Rotors Using a Distributed Computing Strategy

J96-341

Novel Approach to Aerodynamic Analysis Using Analytical/Numerical Matching

J96-354

Counterflow Thrust Vectoring of Supersonic Jets

J96-365

Controlled Leading-Edge Suction for Management of Unsteady Separation over Pitching Airfoils

J96-368

Rayleigh Scattering Technique for Simultaneous Measurements of Velocity and Thermodynamic Properties

J96-370

Simulation of Three-Dimensional Symmetric and Asymmetric Instabilities in Attachment-Line Boundary Layers

J96-384

Interactions of a Vortex with an Oscillating Leading Edge

J96-391

Experimental Studies of Magnetic Levitation Train Aerodynamics

J96-395

Effects of Leading-Edge Lateral Blowing on Delta Wing Aerodynamics

J96-396

Second-Order Small-Disturbance Solution for Wing at Supersonic Speeds

J96-409

State-Space Modeling of Aerodynamic Forces on Plate Using Singular Value Decomposition

J96-419

Comment on the Vorticity Jump Across a Shock Wave

J96-424

Aeroelasticity and Aeroservoelasticity

Nonclassical Effects on Divergence and Flutter of Anisotropic Swept Aircraft Wings

J96-120

Aeroelastic Optimization of a Helicopter Rotor

- with Two-Cell Composite Blades J96-126
- Time-Domain Analysis of Low-Speed Airfoil Flutter J96-159
- Active Panel Flutter Suppression Using Self-Sensing Piezoactuators J96-192
- Eigenmode Analysis in Unsteady Aerodynamics: Reduced-Order Models J96-244
- Accurate Numerical Integration of State-Space Models for Aeroelastic Systems with Free Play J96-347
- Interactions of a Vortex with an Oscillating Leading Edge J96-391

Aerospace Plane

- Performance of a Hypersonic Twin-Nozzle System J96-149
- Simulating Moth Wing Aerodynamics: Towards the Development of Flapping-Wing Technology J96-212
- Parallelization of a Three-Dimensional Flow Solver for Euler Rotorcraft Aerodynamics Predictions J96-361

Configuration Design

- Genetic Optimization of Target Pressure Distributions for Inverse Design Methods J96-139

Flight Operations

- Study of Aircraft Wake Vortex Behavior Near the Ground J96-089

General Aviation

- Behavior of Spinning Pretwisted Composite Plates Using a Nonlinear Finite Element Approach J96-260

Man/Machine Interface

- Automation of Some Operations of a Wind Tunnel Using Artificial Neural Networks J96-066

Noise

- Application of the Finite Element Method to Acoustic Scattering Problems J96-003
- Using High-Order Accurate Essentially Non-oscillatory Schemes for Aeroacoustic Applications J96-041
- Effects of Asymmetric Inflow on Near-Field Propeller Noise J96-042
- Prediction of the Far-Field Jet Noise Using Kirchhoff's Formulation J96-063
- Validation of a Numerical Method for Extracting Liner Impedance J96-084
- Dynamic Effects of Piezoactuators on the Cylindrical Shell Response J96-121
- Effect of Inlet Reflections on Fan Noise Radiation J96-276
- Hybrid Computational Model for Noise Propagation Through a Fuselage Boundary Layer J96-278

Propeller and Rotor Systems

- Effects of Asymmetric Inflow on Near-Field Propeller Noise J96-042
- Momentum and Vortex Theory of Rotor Blade Wakes J96-269

Rotorcraft

- Investigation of High-Order Upwinded Differencing for Vortex Convection J96-052
- Aeroelastic Optimization of a Helicopter Rotor with Two-Cell Composite Blades J96-126
- Numerical Simulation of Viscous Flow over Rotors Using a Distributed Computing Strategy J96-341

Structural Design (Including Loads)

- Shape and Placement of Piezoelectric Sensors for Panel Flutter Limit-Cycle Suppression J96-133
- Simplified Calculation of Eigenvector Derivatives with Repeated Eigenvalues J96-135
- Behavior of Spinning Pretwisted Composite Plates Using a Nonlinear Finite Element Approach J96-260
- Forced Random Parametric Vibration in Single-Degree-of-Freedom Systems J96-333
- Local Buckling of Cracked and Pin-Loaded Plates J96-337
- Large Amplitude Free Flexural Vibration of Stiffened Plates J96-374
- Nonlinear Analysis of Imperfect Metallic and Laminated Cylinders Under Bending Loads J96-379
- Constraint Handling in Genetic Search Using Expression Strategies J96-380
- Drag of Freely Rotatable Cylinder/Splitter-Plate Body at Subcritical Reynolds Number J96-390

Structural Materials

- Behavior of Spinning Pretwisted Composite Plates Using a Nonlinear Finite Element Approach J96-260

Testing, Flight and Ground

- Long-Range Schmidt-Cassegrain Laser Velocimeter for Large Wind-Tunnel Applications J96-080
- Step Response of Pressure-Sensitive Paints J96-081
- Evaluation of Correlated Bias Approximations in Experimental Uncertainty Analysis J96-157
- Asymmetric Systematic Uncertainties in the Determination of Experimental Uncertainty J96-226
- Computer-Controlled Multiparameter Flowfield Measurements Using Planar Laser-Induced Iodine Fluorescence J96-248
- Tunnel-Induced Gradients and Their Effect on Drag J96-411

Vibration

- Analysis of Piezoelectric Structures with Laminated Piezoelectric Triangle Shell Elements J96-015
- Dynamic Effects of Piezoactuators on the Cylindrical Shell Response J96-121
- Shape and Placement of Piezoelectric Sensors for Panel Flutter Limit-Cycle Suppression J96-133
- Curved Piezoactuator Model for Active Vibration Control of Cylindrical Shells J96-160
- Forced Random Parametric Vibration in Single-Degree-of-Freedom Systems J96-333
- Large Amplitude Free Flexural Vibration of Stiffened Plates J96-374
- Vibration Characteristics of Partially Covered Double-Sandwich Cantilever Beam J96-418

Energy

Laser Integration/Systems

- Power Dependence of Chemical Oxygen-Iodine Lasers on Iodine Dissociation J96-410

Rotating Machinery

- New Mixed Van Leer Flux Splitting for Transonic Viscous Flow J96-027
- Improved Jet Coverage Through Vortex Cancellation J96-388

Wind Power

- Unsteady Aerodynamics Associated with a Horizontal-Axis Wind Turbine J96-220

Fluid Dynamics

Aeroacoustics

- Application of the Finite Element Method to Acoustic Scattering Problems J96-003
- Effects of Shear and Strain on Temporal Evolution of Laminar Diffusion Flames J96-012
- Impact of Tab Location Relative to the Nozzle Exit on Jet Distortion J96-030
- Direct Numerical Simulation of Acoustic/Shear Flow Interactions in Two-Dimensional Ducts J96-040
- Using High-Order Accurate Essentially Non-oscillatory Schemes for Aeroacoustic Applications J96-041
- Effects of Asymmetric Inflow on Near-Field Propeller Noise J96-042
- Control of Panel Response to Turbulent Boundary-Layer and Acoustic Excitations J96-043
- Prediction of the Far-Field Jet Noise Using Kirchhoff's Formulation J96-063
- Validation of a Numerical Method for Extracting Liner Impedance J96-084
- Vortex Pairing as a Model for Jet Noise Generation J96-105
- Navier-Stokes Simulations of Jet Flows on a Network of Workstations J96-114
- Optimized Compact Finite Difference Schemes with Maximum Resolution J96-140
- Computation of Sound Radiating from Engine Inlets J96-141
- Numerical Simulations of Flow Modification of Supersonic Rectangular Jets J96-142
- Calculation of the Radiated Sound Field Using an Open Kirchhoff Surface J96-143
- Time-Domain Impedance Boundary Conditions for Computational Aeroacoustics J96-144
- Spatial Transformation of the Discrete Sound Field from a Propeller J96-174
- Forward Motion Effects on Jet Noise, Panel Vibration, and Radiation J96-175
- Sensitivity Analysis of the Aeroacoustic Response of Turbomachinery Blade Rows J96-240
- Aeroacoustic Properties of a Supersonic Diamond-Shaped Jet J96-242
- Effect of Inlet Reflections on Fan Noise Radiation J96-276
- Sound Propagation and Radiation in a Curved Duct J96-277
- Hybrid Computational Model for Noise Propagation Through a Fuselage Boundary Layer J96-278
- Sound Generation by a Ring Vortex-Shock Wave Interaction J96-302
- Pressure Field Around a Rectangular Supersonic Jet in Screech J96-314
- Tone Excitation of a Supersonic Bounded Shear Layer J96-315
- Aeroelastic Stability of a Beam Traveling in a Tunnel Lined with Resonators J96-316
- Implicit High-Order Compact Algorithm for Computational Acoustics J96-319
- Inverse Aeroacoustic Problem for a Streamlined Body Part 1: Basic Formulation J96-355
- Inverse Aeroacoustic Problem for a Streamlined Body Part 2: Accuracy of Solutions J96-356
- Computation of Quadrupole Noise Using Acoustic Analogy J96-357
- Algebraic Turbulence Model Simulations of Supersonic Open-Cavity Flow Physics J96-358
- Behavior of Heavy Particles in an Acoustically Forced Confined Shear Flow J96-382

Boundary Layers and Heat Transfer—Laminar

- Comment on "Laminar Boundary Layers Subjected to High-Frequency Traveling-Wave Fluctuations" **J93-145**
 Matching Inviscid/Boundary-Layer Flowfields **J96-004**
 Boundary-Layer-Tripping Studies of Compressible Dynamic Stall Flow **J96-013**
 Calibration of Preston Tubes **J96-034**
 Flow over an Obstacle Emerging from the Wall of a Channel **J96-145**
 Self-Similar Viscous Incompressible Flow Along an Unbounded Corner **J96-148**
 Drag Reduction with the Slip Wall **J96-166**
 Parallelization of Direct Simulation Monte Carlo Method Combined with Monotonic Lagrangian Grid **J96-214**
 Solution for Spin-Up from Rest of Liquid with a Free Surface **J96-224**
 Boundary-Layer Transition Due to Isolated Three-Dimensional Roughness on Airfoil Leading Edge **J96-303**
 Space-Time Correlation Measurements in a Hypersonic Transitional Boundary Layer **J96-398**

Boundary Layers and Heat Transfer—Turbulent

- Reynolds Number Effects on the Prediction of Velocity Profile in Compressible Flows **J93-252**
 Experimental Studies of Supersonic Film Cooling with Shock Wave Interaction **J96-044**
 Multiple-Time-Scale Turbulence Model Computations of Flow over a Square Rib **J96-097**
 Viscous Drag Reduction Using Riblets on NACA 0012 Airfoil to Moderate Incidence **J96-106**
 Comparison of Eddy Viscosity-Transport Turbulence Models for Three-Dimensional, Shock-Separated Flowfields **J96-116**
 Comparison of Four Turbulence Models for Wall-Bounded Flows Affected by Transverse Curvature **J96-127**
 Performance of Eddy-Viscosity-Based Turbulence Models in Three-Dimensional Turbulent Interaction **J96-128**
 Supersonic Separation with Obstructions **J96-130**
 Turbulent Boundary Layer in an Adverse Pressure Gradient: Effectiveness of Riblets **J96-146**
 Laser Doppler Anemometer Measurements of Turbulent Boundary Layer over a Riblet Surface **J96-156**
 Scaling of the Bursting Frequency for Turbulent Boundary Layers Approaching Separation **J96-165**
 Drag Reduction with the Slip Wall **J96-166**
 Two-Layer Approximate Boundary Conditions for Large-Eddy Simulations **J96-176**
 Modeling Mass Entrainment in a Quasi-One-Dimensional Shock Tube Code **J96-203**
 Implicit Computation of Three-Dimensional Compressible Navier-Stokes Equations Using $k-\epsilon$ Turbulence Closure **J96-209**
 Explicit Algebraic Stress Model of Turbulence with Anisotropic Dissipation **J96-340**
 Simulating Turbulent Flow over Thin Element and Flat Valley V-Shaped Riblets **J96-359**
 Combined Laser Doppler Velocimetry and Cross-Wire Anemometry Analysis for Supersonic Turbulent Flow **J96-360**
 Experimental Studies of Magnetic Levitation Train Aerodynamics **J96-395**
 Turbulence Measurements in a Mach 2.9 Boundary Layer Including Mild Pressure Gradients **J96-397**

Space-Time Correlation Measurements in a Hypersonic Transitional Boundary Layer**J96-398****Boundary-Layer Stability and Transition**

- Flow Oscillation over an Airfoil Near Stall **J96-031**
 Skin-Friction Measurements and Calculations on a Lifting Airfoil **J96-039**
 Boundary-Layer Transition on Swept Cylinders at Hypersonic Speeds **J96-102**
 Comparison of Temporal and Spatial Direct Numerical Simulation of Compressible Boundary-Layer Transition **J96-107**
 Analysis of Compressible Light Dynamic Stall Flow at Transitional Reynolds Numbers **J96-221**
 Three-Dimensional Velocity Measurements Within Görtler Vortices **J96-267**
 Spatial Evolution of Görtler Instability in a Curved Duct of High Curvature **J96-279**
 Interaction of Supersonic Wing-Tip Vortices with a Normal Shock **J96-288**
 Boundary-Layer Transition Due to Isolated Three-Dimensional Roughness on Airfoil Leading Edge **J96-303**
 Transition Correlation in Flow over a Swept Cylinder **J96-383**
 Simulation of Three-Dimensional Symmetric and Asymmetric Instabilities in Attachment-Line Boundary Layers **J96-384**
 Transition Detection with Deposited Hot Films in Cryogenic Tunnels **J96-385**
 Space-Time Correlation Measurements in a Hypersonic Transitional Boundary Layer **J96-398**
 Stabilization of a Nozzle Boundary Layer by Local Surface Heating **J96-399**
 Boundary-Layer Stability Measurements in a Hypersonic Quiet Tunnel **J96-400**

Computational Fluid Dynamics

- Comment on "Laminar Flow Past Three Closely Spaced Monodisperse Spheres or Nonevaporating Drops" **J91-006**
 Matching Inviscid/Boundary-Layer Flowfields **J96-004**
 Three-Dimensional Unstructured Viscous Grids by the Advancing-Layers Method **J96-005**
 Calculation of Streaklines for Time Periodic Flows **J96-010**
 Experimental and Numerical Study of Transonic Turbine Cascade Flow **J96-014**
 Improvement of Explicit Multistage Schemes for Central Spatial Discretization **J96-025**
 Use of a Wake-Integral Method for Computational Drag Analysis **J96-026**
 New Mixed Van Leer Flux Splitting for Transonic Viscous Flow **J96-027**
 Efficient, Robust Second-Order Total Variation Diminishing Scheme **J96-028**
 Impulsive Start of a Symmetric Airfoil at High Angle of Attack **J96-038**
 Skin-Friction Measurements and Calculations on a Lifting Airfoil **J96-039**
 Characteristic-Based Pressure Correction at All Speeds **J96-045**
 Three-Dimensional Unstructured Adaptive Multigrid Scheme for the Navier-Stokes Equations **J96-046**
 Hybrid Prismatic/Tetrahedral Grid Generation for Viscous Flows Around Complex Geometries **J96-047**
 Thrust Generation due to Airfoil Flapping **J96-051**
 Boundary Conditions for the Vorticity-Velocity Formulation of Navier-Stokes Equations **J96-064**

Perspective on Unstructured Grid Flow Solvers**J96-083**

- Implicit Time-Stepping Methods for the Navier-Stokes Equations **J96-085**
 Spectral Solution of the Viscous Blunt-Body Problem 2: Multidomain Approximation **J96-086**
 Multiple-Time-Scale Turbulence Model Computations of Flow over a Square Rib **J96-097**
 Temporal Evolution of Three-Dimensional Vortex Breakdown from Steady, Axisymmetric Solutions **J96-099**
 Numerical Simulation of Transient Hypersonic Flow Using the Essentially Nonoscillatory Schemes **J96-103**
 Comparison of Temporal and Spatial Direct Numerical Simulation of Compressible Boundary-Layer Transition **J96-107**
 Acceleration of Iterative Algorithms on Highly Clustered Grids **J96-108**
 External Flow Computations Using Global Boundary Conditions **J96-109**
 Adaptive Prismatic-Tetrahedral Grid Refinement and Redistribution for Viscous Flows **J96-110**
 Grid Influence on Upwind Schemes for the Euler and Navier-Stokes Equations **J96-111**
 Numerical Simulations of Transitional Axisymmetric Coaxial Jets **J96-113**
 Numerical Simulations of Three-Dimensional Drop Collisions **J96-115**
 Comparison of Eddy Viscosity-Transport Turbulence Models for Three-Dimensional, Shock-Separated Flowfields **J96-116**
 Performance of Eddy-Viscosity-Based Turbulence Models in Three-Dimensional Turbulent Interaction **J96-128**
 Solution-Adaptive Approach for Unsteady Flow Calculations on Quadrilateral-Triangular Meshes **J96-131**
 Genetic Optimization of Target Pressure Distributions for Inverse Design Methods **J96-139**
 Optimized Compact Finite Difference Schemes with Maximum Resolution **J96-140**
 Computation of Sound Radiating from Engine Inlets **J96-141**
 Numerical Simulations of Flow Modification of Supersonic Rectangular Jets **J96-142**
 Time-Domain Impedance Boundary Conditions for Computational Aeroacoustics **J96-144**
 Solution-Adaptive Cartesian Cell Approach for Viscous and Inviscid Flows **J96-147**
 Newton-Krylov Methods for Low-Mach-Number Compressible Combustion **J96-150**
 Statistical Saturation of Buoyant Flow Induced by a Fluctuating Acceleration **J96-152**
 Experimental and Numerical Investigations of Dynamic Stall on a Pitching Airfoil **J96-153**
 Evaluation of the Dynamic Model for Simulations of Compressible Decaying Isotropic Turbulence **J96-154**
 Time-Domain Analysis of Low-Speed Airfoil Flutter **J96-159**
 Limitations of Traditional Finite Volume Discretizations for Unsteady Computational Fluid Dynamics **J96-167**
 Dusty Shock Flow with Unstructured Adaptive Finite Elements and Parcels **J96-169**
 Two-Layer Approximate Boundary Conditions for Large-Eddy Simulations **J96-176**
 Automatic Grid Generation and Flow Solution for Complex Geometries **J96-177**
 Comparison of Numerical and Analytical Jacobians **J96-178**
 Numerical Investigation of Shock Wave Reflections in Steady Flows **J96-184**
 Role of Secondary Vorticity in Parallel Blade-Vortex Interactions **J96-188**
 Numerical Investigation of Supersonic Wing-Tip Vortices **J96-189**

- Primitive Variable Implicit Approach for Compressible Chemical Vapor Deposition **J96-201**
- Rotating Dissipation for Accurate Shock Capturing **J96-202**
- Modeling Mass Entrainment in a Quasi-One-Dimensional Shock Tube Code **J96-203**
- Hyperbolic Equation Method of Grid Generation for Enclosed Regions **J96-204**
- Three-Dimensional Shock/Boundary-Layer Interaction Using Reynolds Stress Equation Turbulence Model **J96-208**
- Implicit Computation of Three-Dimensional Compressible Navier-Stokes Equations Using $k-\epsilon$ Turbulence Closure **J96-209**
- Computation of Unsteady Three-Dimensional Transonic Nozzle Flows Using $k-\epsilon$ Turbulence Closure **J96-210**
- Performance of Three-Dimensional Compressible Navier-Stokes Codes at Low Mach Numbers **J96-213**
- Parallelization of Direct Simulation Monte Carlo Method Combined with Monotonic Lagrangian Grid **J96-214**
- Data-Parallel Lower-Upper Relaxation Method for the Navier-Stokes Equations **J96-215**
- Investigation of the Mixing Flow Structure in Multilobe Mixers **J96-217**
- Modeling of Dust Entrainment by High-Speed Airflow **J96-218**
- Solution for Spin-Up from Rest of Liquid with a Free Surface **J96-224**
- Sensitivity Analysis of the Aeroacoustic Response of Turbomachinery Blade Rows **J96-240**
- Low-Reynolds-Number Separation on an Airfoil **J96-243**
- Three-Dimensional Aerodynamic Shape Optimization Using Discrete Sensitivity Analysis **J96-275**
- Three-Dimensional Hyperbolic Grid Generation with Inherent Dissipation and Laplacian Smoothing **J96-280**
- Pseudotime Method for Shape Design of Euler Flows **J96-281**
- Uncoupled Temporally Second-Order Accurate Implicit Solver of Incompressible Navier-Stokes Equations **J96-284**
- Two-Dimensional Model for Spark Discharge Simulation in Air **J96-285**
- Effect of Fences on Airfoil Aerodynamics at -90° Degree Incidence **J96-313**
- Recursive Numerical Algorithm for Conformal Mapping in Two-Dimensional Hydrodynamics **J96-317**
- Implicit Upwind Residual-Distribution Euler and Navier-Stokes Solver on Unstructured Meshes **J96-318**
- Implicit High-Order Compact Algorithm for Computational Acoustics **J96-319**
- Accurate Development of Leading-Edge Vortex Using an Embedded Conical Grid **J96-320**
- Unsteady Flow Calculations with a Multigrid Navier-Stokes Method **J96-321**
- Chemical Nonequilibrium Inviscid Flow over a Blunt Cone at Incidence **J96-322**
- Nonoscillatory Schemes for Kinetic Model Equations for Gases with Internal Energy States **J96-324**
- Detailed Mechanism of the Unsteady Combustion Around Hypersonic Projectiles **J96-325**
- Higher-Order Numerical Model for Simulation of Time-Dependent Variable-Density Flows **J96-326**
- Numerical Simulation of Viscous Flow over Rotors Using a Distributed Computing Strategy **J96-341**
- Proving Algorithm Symmetry for Flows Exhibiting Symmetry Breaking **J96-343**
- Computation of Quadrupole Noise Using Acoustic Analogy **J96-357**
- Simulating Turbulent Flow over Thin Element and Flat Valley V-Shaped Riblets **J96-359**
- Parallelization of a Three-Dimensional Flow Solver for Euler Rotorcraft Aerodynamics Predictions **J96-361**
- Application of Turbulence Models for Aerodynamic and Propulsion Flowfields **J96-363**
- Large-Eddy Simulations of the Vortex-Pair Breakup in Aircraft Wakes **J96-369**
- Calculation of Flow in Transition Duct Using Second-Order Closure and Wall Functions **J96-386**
- Adaptive Unstructured Grid Generation for Viscous Flow Applications **J96-387**
- Effects of Leading-Edge Lateral Blowing on Delta Wing Aerodynamics **J96-396**
- Implicit Solution Method for Incompressible Navier-Stokes Equations Including Two-Layer $k-\tau$ Turbulence Model **J96-401**
- Dynamics of Isoconcentration Surfaces in Weak Shock Turbulent Mixing Interaction **J96-406**
- Modeling Influences of Inlet Swirl Profiles on Dump Combustor Flows **J96-420**
- Prediction of Aerodynamic Flows with a New Explicit Algebraic Stress Model **J96-421**
- Hydrodynamics**
- Aerodynamic Lift at Reynolds Numbers Below 7×10^4 **J96-299**
- Recursive Numerical Algorithm for Conformal Mapping in Two-Dimensional Hydrodynamics **J96-317**
- Efficient Foil Propulsion Through Vortex Control **J96-366**
- Hypersonic Flow**
- Comment on "New Similarity Solutions for Hypersonic Boundary Layers with Application to Inlet Flows," Part 1 **J95-332**
- Comment on "New Similarity Solutions for Hypersonic Boundary Layers with Application to Inlet Flows," Part 2 **J95-332**
- Reply by the Author to Jack Pike **J95-332**
- Reduction of Fluctuating Pressure Loads in Shock/Boundary-Layer Interactions Using Vortex Generators: Part 2 **J96-029**
- Mass Spectrometer Measurements of Test Gas Composition in a Shock Tunnel **J96-033**
- Tunable Diode Laser Measurements on Nitric Oxide in a Hypersonic Wind Tunnel **J96-077**
- Spectral Solution of the Viscous Blunt-Body Problem 2: Multidomain Approximation **J96-086**
- Three-Component Force Balance for Flows of Millisecond Duration **J96-090**
- Boundary-Layer Transition on Swept Cylinders at Hypersonic Speeds **J96-102**
- Numerical Simulation of Transient Hypersonic Flow Using the Essentially Nonoscillatory Schemes **J96-103**
- Simulation of Multiple Shock-Shock Interference Patterns on a Cylindrical Leading Edge **J96-117**
- Performance of a Hypersonic Twin-Nozzle System **J96-149**
- High-Enthalpy, Hypersonic Compression Corner Flow **J96-179**
- Comparison of Maximum Entropy Direct Simulation Monte Carlo Code with Flowfield Measurements **J96-216**
- Methods for Visualizing Hypersonic Shock-Wave/Boundary-Layer Interaction Using Electrical Discharges **J96-227**
- Navier-Stokes Simulation of a Cone-Derived Waverider with Multidirectional Curvature **J96-268**
- Chemical Nonequilibrium Inviscid Flow over a Blunt Cone at Incidence **J96-322**
- Visualization and Analysis of Bow Shocks in a Superoorbital Expansion Tube **J96-346**
- Leading-Edge Bluntness Effects in High Enthalpy, Hypersonic Compression Corner Flow **J96-362**
- Boundary-Layer Stability Measurements in a Hypersonic Quiet Tunnel **J96-400**
- Development of a Rayleigh Scattering Measurement System for Hypersonic Wind-Tunnel Applications **J96-422**
- Inlet, Nozzle, Diffuser, and Channel Flows**
- Flowfield Surveys and Computations of a Crossing-Shock Wave/Boundary-Layer Interaction **J96-006**
- Measurements of the Triple Shock Wave/Turbulent Boundary-Layer Interaction **J96-007**
- Efficient, Robust Second-Order Total Variation Diminishing Scheme **J96-028**
- Impact of Tab Location Relative to the Nozzle Exit on Jet Distortion **J96-030**
- Mass Spectrometer Measurements of Test Gas Composition in a Shock Tunnel **J96-033**
- Oblique-Shock/Expansion-Fan Interaction—Analytical Solution **J96-065**
- Supersonic-Inlet Boundary-Layer Bleed Flow **J96-119**
- Skewed Shear-Layer Mixing Within a Duct **J96-129**
- Fluorescence Velocity Measurements in the Interior of a Hydrogen Arcjet Nozzle **J96-132**
- Simulating Heat Addition via Mass Addition in Variable Area Compressible Flows **J96-168**
- Computation of Unsteady Three-Dimensional Transonic Nozzle Flows Using $k-\epsilon$ Turbulence Closure **J96-210**
- Three-Dimensional Velocity Measurements Within Görtler Vortices **J96-267**
- Predictive Capabilities of Turbulence Models for a Confined Swirling Flow **J96-270**
- Pseudotime Method for Shape Design of Euler Flows **J96-281**
- Interface Wavelength Between Supersonic Jets and Subsonic Flowfields **J96-301**
- Pressure Fluctuations in an Unstable Confined Jet **J96-304**
- Application of Turbulence Models for Aerodynamic and Propulsion Flowfields **J96-363**
- Counterflow Thrust Vectoring of Supersonic Jets **J96-365**
- Computational and Experimental Investigations of Rarefied Flows in Small Nozzles **J96-367**
- Calculation of Flow in Transition Duct Using Second-Order Closure and Wall Functions **J96-386**
- Stabilization of a Nozzle Boundary Layer by Local Surface Heating **J96-399**
- Simulation of Turbulent Square-Duct Flow: Dissipation and Small-Scale Motion **J96-402**
- Jets, Wakes, and Viscid-Inviscid Flow Interactions**
- Comment on "Self-Excited Wire Method for the Control of Turbulent Mixing Layers" **J95-161**
- Flowfield Surveys and Computations of a Crossing-Shock Wave/Boundary-Layer Interaction **J96-006**
- Measurements of the Triple Shock Wave/Turbulent Boundary-Layer Interaction **J96-007**
- Numerical Simulation of Mixing for Turbulent Slot Injection **J96-009**
- Calculation of Streaklines for Time Periodic Flows **J96-010**
- Impact of Tab Location Relative to the Nozzle Exit on Jet Distortion **J96-030**

- Cinematic Particle Image Velocimetry of High-Reynolds-Number Turbulent Free Shear Layer **J96-048**
- Computation of Turbulent Axisymmetric and Nonaxisymmetric Jet Flows Using the $K-\epsilon$ Model **J96-049**
- Experimental Investigation of Supersonic Gaseous Injection into a Supersonic Freestream **J96-050**
- Prediction of the Far-Field Jet Noise Using Kirchhoff's Formulation **J96-063**
- Application of Absorption Filter Planar Doppler Velocimetry to Sonic and Supersonic Jets **J96-068**
- Free Shear Layer Interaction with an Expansion-Compression Wave Pair **J96-087**
- Recirculation Zones of Unconfined and Confined Annular Swirling Jets **J96-088**
- Comparison of Baldwin-Lomax Turbulence Models for Two-Dimensional Open Cavity Computations **J96-098**
- Vortex Pairing as a Model for Jet Noise Generation **J96-105**
- Experimental Study of a Compressible Counter-current Turbulent Shear Layer **J96-112**
- Numerical Simulations of Transitional Axisymmetric Coaxial Jets **J96-113**
- Navier-Stokes Simulations of Jet Flows on a Network of Workstations **J96-114**
- Skewed Shear-Layer Mixing Within a Duct **J96-129**
- Numerical Simulations of Flow Modification of Supersonic Rectangular Jets **J96-142**
- Performance of a Hypersonic Twin-Nozzle System **J96-149**
- Three-Dimensional Wake Formations Behind a Family of Regular Polygonal Plates **J96-180**
- Investigation of Large-Scale Structures in Supersonic Planar Base Flows **J96-181**
- Velocity and Turbulence Measurements in a Supersonic Base Flow with Mass Bleed **J96-182**
- Unsteady Pressure Loads Generated by Swept-Shock-Wave/Boundary-Layer Interactions **J96-185**
- Role of Secondary Vorticity in Parallel Blade-Vortex Interactions **J96-188**
- Numerical Investigation of Supersonic Wing-Tip Vortices **J96-189**
- Investigation of the Mixing Flow Structure in Multilobe Mixers **J96-217**
- Structure of Coherent Instabilities in a Supersonic Shear Layer **J96-241**
- Aeroacoustic Properties of a Supersonic Diamond-Shaped Jet **J96-242**
- Multiaxis Fluidic Thrust Vector Control of a Supersonic Jet Using Counterflow **J96-266**
- Predictive Capabilities of Turbulence Models for a Confined Swirling Flow **J96-270**
- Characteristic Features of Large Structures in Compressible Mixing Layers **J96-282**
- Coaxial Jets from Lobed-Mixer Nozzles **J96-283**
- Uncoupled Temporally Second-Order Accurate Implicit Solver of Incompressible Navier-Stokes Equations **J96-284**
- Enhancement of the Leading-Edge Separation Vortices by Trailing-Edge Lateral Blowing **J96-300**
- Interface Wavelength Between Supersonic Jets and Subsonic Flowfields **J96-301**
- Sound Generation by a Ring Vortex-Shock Wave Interaction **J96-302**
- Pressure Fluctuations in an Unstable Confined Jet **J96-304**
- Kármán Vortex Development: Relation to Symmetry and Circulation of Transition Vortices **J96-305**
- Pressure Field Around a Rectangular Supersonic Jet in Screech **J96-314**
- Tone Excitation of a Supersonic Bounded Shear Layer **J96-315**
- Large-Scale Structure Evolution in Supersonic Interacting Shear Layers **J96-323**
- Bow Shock/Jet Interaction in Compressible Transverse Injection Flowfields **J96-342**
- Correlation of Separation Angles Induced by Glancing Interactions **J96-345**
- Leading-Edge Bluntness Effects in High Enthalpy, Hypersonic Compression Corner Flow **J96-362**
- Spatial Evolution of a Monochromatically Forced Flat-Plate Wake **J96-364**
- Counterflow Thrust Vectoring of Supersonic Jets **J96-365**
- Large-Eddy Simulations of the Vortex-Pair Breakup in Aircraft Wakes **J96-369**
- Adaptive Unstructured Grid Generation for Viscous Flow Applications **J96-387**
- Improved Jet Coverage Through Vortex Cancellation **J96-388**
- Drag of Freely Rotatable Cylinder/Splitter-Plate Body at Subcritical Reynolds Number **J96-390**
- Images of Dissipation Layers to Quantify Mixing Within a Turbulent Jet **J96-405**
- Dynamics of Isoconcentration Surfaces in Weak Shock Turbulent Mixing Interaction **J96-406**
- Computational Study of the Flowfields Associated with Oblique Shock/Vortex Interactions **J96-407**
- Comment on the Vorticity Jump Across a Shock Wave **J96-424**
- Multiphase Flows**
- Numerical Simulations of Three-Dimensional Drop Collisions **J96-115**
- Dusty Shock Flow with Unstructured Adaptive Finite Elements and Parcels **J96-169**
- Simulations of Particle Dynamics in a Confined Shear Flow **J96-183**
- Modeling of Dust Entrainment by High-Speed Airflow **J96-218**
- Behavior of Heavy Particles in an Acoustically Forced Confined Shear Flow **J96-382**
- Plasmadynamics and MHD**
- Ionizational Nonequilibrium Induced by Neutral Chemistry in Air Plasmas **J96-271**
- Rarefied Flows**
- Monte Carlo Computation of Rarefied Supersonic Flow into a Pitot Probe **J96-011**
- Numerical Simulation of the Blast-Wave Accelerator **J96-211**
- Parallelization of Direct Simulation Monte Carlo Method Combined with Monotonic Lagrangian Grid **J96-214**
- Comparison of Maximum Entropy Direct Simulation Monte Carlo Code with Flowfield Measurements **J96-216**
- Nonoscillatory Schemes for Kinetic Model Equations for Gases with Internal Energy States **J96-324**
- Computational and Experimental Investigations of Rarefied Flows in Small Nozzles **J96-367**
- Reacting Flows and Combustion**
- Comment on "New Similarity Solutions for Hypersonic Boundary Layers with Application to Inlet Flows," Part 1 **J95-332**
- Comment on "New Similarity Solutions for Hypersonic Boundary Layers with Application to Inlet Flows," Part 2 **J95-332**
- Reply by the Author to Jack Pike **J95-332**
- Effects of Shear and Strain on Temporal Evolution of Laminar Diffusion Flames **J96-012**
- Chemical Laser Modeling with Genetic Algorithms **J96-053**
- Simultaneous Water Vapor Concentration and Temperature Measurements Using 1.31 μm Diode Lasers **J96-075**
- OH Imaging in a Lean Burning High-Pressure Combustor **J96-095**
- Comparison of Eddy Viscosity-Transport Turbulence Models for Three-Dimensional, Shock-Separated Flowfields **J96-116**
- Newton-Krylov Methods for Low-Mach-Number Compressible Combustion **J96-150**
- High-Enthalpy, Hypersonic Compression Corner Flow **J96-179**
- Primitive Variable Implicit Approach for Compressible Chemical Vapor Deposition **J96-201**
- Near-Limit Oscillations of Spherical Diffusion Flames **J96-219**
- Ionizational Nonequilibrium Induced by Neutral Chemistry in Air Plasmas **J96-271**
- Two-Dimensional Model for Spark Discharge Simulation in Air **J96-285**
- Equilibrium Vibrational Properties of Ground State Nitrogen up to 35,000 K **J96-286**
- Acoustic Response of Droplet Flames to Pressure Oscillations **J96-287**
- Chemical Nonequilibrium Inviscid Flow over a Blunt Cone at Incidence **J96-322**
- Detailed Mechanism of the Unsteady Combustion Around Hypersonic Projectiles **J96-325**
- Higher-Order Numerical Model for Simulation of Time-Dependent Variable-Density Flows **J96-326**
- Dynamics of Isoconcentration Surfaces in Weak Shock Turbulent Mixing Interaction **J96-406**
- Power Dependence of Chemical Oxygen-Iodine Lasers on Iodine Dissociation **J96-410**
- Separated Flows**
- Numerical Simulation of Mixing for Turbulent Slot Injection **J96-009**
- Reduction of Fluctuating Pressure Loads in Shock/Boundary-Layer Interactions Using Vortex Generators: Part 2 **J96-029**
- Flow Oscillation over an Airfoil Near Stall **J96-031**
- Influence of Surface Flow on Aerodynamic Loads of a Cantilever Wing **J96-082**
- Recirculation Zones of Unconfined and Confined Annular Swirling Jets **J96-088**
- Study of Aircraft Wake Vortex Behavior Near the Ground **J96-089**
- Multiple-Time-Scale Turbulence Model Computations of Flow over a Square Rib **J96-097**
- Performance of Eddy-Viscosity-Based Turbulence Models in Three-Dimensional Turbulent Interaction **J96-128**
- Supersonic Separation with Obstructions **J96-130**
- Flow over an Obstacle Emerging from the Wall of a Channel **J96-145**
- Experimental and Numerical Investigations of Dynamic Stall on a Pitching Airfoil **J96-153**
- Interaction of Missile Nose-Tip Vortices with a Control Surface **J96-155**
- High-Enthalpy, Hypersonic Compression Corner Flow **J96-179**
- Investigation of Large-Scale Structures in Supersonic Planar Base Flows **J96-181**
- Velocity and Turbulence Measurements in a Supersonic Base Flow with Mass Bleed **J96-182**
- Unsteady Pressure Loads Generated by Swept-Shock-Wave/Boundary-Layer Interactions **J96-185**

Three-Dimensional Shock/Boundary-Layer Interaction Using Reynolds Stress Equation Turbulence Model **J96-208**
 Unsteady Aerodynamics Associated with a Horizontal-Axis Wind Turbine **J96-220**
 Analysis of Compressible Light Dynamic Stall Flow at Transitional Reynolds Numbers **J96-221**

Low-Reynolds-Number Separation on an Airfoil **J96-243**

Predictive Capabilities of Turbulence Models for a Confined Swirling Flow **J96-270**

Flowfield Measurements Inside a Boundary-Layer Bleed Slot **J96-312**

Effect of Fences on Airfoil Aerodynamics at $\sim 90^\circ$ Degree Incidence **J96-313**

Tone Excitation of a Supersonic Bounded Shear Layer **J96-315**

Leading-Edge Bluntness Effects in High-Enthalpy, Hypersonic Compression Corner Flow **J96-362**

Controlled Leading-Edge Suction for Management of Unsteady Separation over Pitching Airfoils **J96-368**

Drag of Freely Rotatable Cylinder/Splitter-Plate Body at Subcritical Reynolds Number **J96-390**

Tunnel-Induced Gradients and Their Effect on Drag **J96-411**

Modeling Influences of Inlet Swirl Profiles on Dump Combustor Flows **J96-420**

Shock Waves and Detonations

Oblique-Shock/Expansion-Fan Interaction—Analytical Solution **J96-065**

Numerical Simulation of Transient Hypersonic Flow Using the Essentially Nonoscillatory Schemes **J96-103**

Simulation of Multiple Shock-Shock Interference Patterns on a Cylindrical Leading Edge **J96-117**

Experimental Study of a Normal Shock/Homogeneous Turbulence Interaction **J96-151**

Dusty Shock Flow with Unstructured Adaptive Finite Elements and Parcels **J96-169**

Rotating Dissipation for Accurate Shock Capturing **J96-202**

Analysis of Unsteady Supersonic Viscous Flows by a Shock-Fitting Technique **J96-222**

Methods for Visualizing Hypersonic Shock-Wave/Boundary-Layer Interaction Using Electrical Discharges **J96-227**

Correlation of Shock Angles Caused by Rhombic Delta Wings **J96-237**

Sound Generation by a Ring Vortex-Shock Wave Interaction **J96-302**

Correlation of Shock Angles Caused by Flat Delta Wings **J96-306**

Flowfield Measurements Inside a Boundary-Layer Bleed Slot **J96-312**

Detailed Mechanism of the Unsteady Combustion Around Hypersonic Projectiles **J96-325**

Interaction of Swept and Unswept Normal Shock Waves with Boundary Layers **J96-327**

Stability of Regular and Mach Reflection Wave Configurations in Steady Flows **J96-344**

Computational Study of the Flowfields Associated with Oblique Shock/Vortex Interactions **J96-407**

Subsonic Flow

Computation of Turbulent Axisymmetric and Nonaxisymmetric Jet Flows Using the $K-\epsilon$ Model **J96-049**

Thrust Generation due to Airfoil Flapping **J96-051**

Viscous Drag Reduction Using Riblets on NACA 0012 Airfoil to Moderate Incidence **J96-106**

Skewed Shear-Layer Mixing Within a Duct **J96-129**

Investigation of the Mixing Flow Structure in Multilobe Mixers **J96-217**

Unsteady Aerodynamic Model of Flapping Wings **J96-223**

Novel Approach to Aerodynamic Analysis Using Analytical/Numerical Matching **J96-354**

Simulating Turbulent Flow over Thin Element and Flat Valley V-Shaped Riblets **J96-359**

Transition Correlation in Flow over a Swept Cylinder **J96-383**

Prediction of Aerodynamic Flows with a New Explicit Algebraic Stress Model **J96-421**

Supersonic Flow

Reynolds Number Effects on the Prediction of Velocity Profile in Compressible Flows **J93-252**

Numerical Simulation of Mixing for Turbulent Slot Injection **J96-009**

Monte Carlo Computation of Rarefied Supersonic Flow into a Pitot Probe **J96-011**

Reduction of Fluctuating Pressure Loads in Shock/Boundary-Layer Interactions Using Vortex Generators: Part 2 **J96-029**

Experimental Studies of Supersonic Film Cooling with Shock Wave Interaction **J96-044**

Computation of Turbulent Axisymmetric and Nonaxisymmetric Jet Flows Using the $K-\epsilon$ Model **J96-049**

Experimental Investigation of Supersonic Gaseous Injection into a Supersonic Freestream **J96-050**

Application of Absorption Filter Planar Doppler Velocimetry to Sonic and Supersonic Jets **J96-068**

Demonstration and Characterization of Filtered Rayleigh Scattering for Planar Velocity Measurements **J96-069**

Complete Three-Dimensional Multiparameter Mapping of a Supersonic Ramp Fuel Injector Flowfield **J96-071**

Comparison of Planar Fluorescence Measurements and Computational Modeling of a Shock-Layer Flow **J96-073**

Spectral Solution of the Viscous Blunt-Body Problem 2: Multidomain Approximation **J96-086**

Free Shear Layer Interaction with an Expansion-Compression Wave Pair **J96-087**

Comparison of Temporal and Spatial Direct Numerical Simulation of Compressible Boundary-Layer Transition **J96-107**

Experimental Study of a Compressible Counter-current Turbulent Shear Layer **J96-112**

Supersonic Separation with Obstructions **J96-130**

Experimental Study of a Normal Shock/Homogeneous Turbulence Interaction **J96-151**

Evaluation of the Dynamic Model for Simulations of Compressible Decaying Isotropic Turbulence **J96-154**

Investigation of Large-Scale Structures in Supersonic Planar Base Flows **J96-181**

Velocity and Turbulence Measurements in a Supersonic Base Flow with Mass Bleed **J96-182**

Numerical Investigation of Shock Wave Reflections in Steady Flows **J96-184**

Particle Size Distribution Technique Using Conventional Laser Doppler Velocimetry Measurements **J96-190**

Rotating Dissipation for Accurate Shock Capturing **J96-202**

Three-Dimensional Shock/Boundary-Layer Interaction Using Reynolds Stress Equation Turbulence Model **J96-208**

Analysis of Unsteady Supersonic Viscous Flows by a Shock-Fitting Technique **J96-222**

Correlation of Shock Angles Caused by Rhombic Delta Wings **J96-237**

Vortex-Wake Characteristics of a Supersonic Transport Wing Planform at Mach 2.5 **J96-273**

Characteristic Features of Large Structures in Compressible Mixing Layers **J96-282**

Coaxial Jets from Lobed-Mixer Nozzles **J96-283**

Correlation of Shock Angles Caused by Flat Delta Wings **J96-306**

Flowfield Measurements Inside a Boundary-Layer Bleed Slot **J96-312**

Large-Scale Structure Evolution in Supersonic Interacting Shear Layers **J96-323**

Interaction of Swept and Unswept Normal Shock Waves with Boundary Layers **J96-327**

Stability of Regular and Mach Reflection Wave Configurations in Steady Flows **J96-344**

Correlation of Separation Angles Induced by Glancing Interactions **J96-345**

Stabilization of a Nozzle Boundary Layer by Local Surface Heating **J96-399**

Second-Order Small-Disturbance Solution for Wing at Supersonic Speeds **J96-409**

Transonic Flow

Experimental and Numerical Study of Transonic Turbine Cascade Flow **J96-014**

Efficient, Robust Second-Order Total Variation Diminishing Scheme **J96-028**

Characteristic-Based Pressure Correction at All Speeds **J96-045**

Grid Influence on Upwind Schemes for the Euler and Navier-Stokes Equations **J96-111**

Transonic Equivalence Rule Involving Lift and Shocks **J96-170**

Automatic Grid Generation and Flow Solution for Complex Geometries **J96-177**

Implicit Computation of Three-Dimensional Compressible Navier-Stokes Equations Using $k-\epsilon$ Turbulence Closure **J96-209**

Computation of Unsteady Three-Dimensional Transonic Nozzle Flows Using $k-\epsilon$ Turbulence Closure **J96-210**

Parallelization of a Three-Dimensional Flow Solver for Euler Rotorcraft Aerodynamics Predictions **J96-361**

Unsteady Flows

Comment on "Laminar Boundary Layers Subjected to High-Frequency Traveling-Wave Fluctuations" **J93-145**

Effects of Shear and Strain on Temporal Evolution of Laminar Diffusion Flames **J96-012**

Experimental and Numerical Study of Transonic Turbine Cascade Flow **J96-014**

Flow Oscillation over an Airfoil Near Stall **J96-031**

Impulsive Start of a Symmetric Airfoil at High Angle of Attack **J96-038**

Cinematic Particle Image Velocimetry of High-Reynolds-Number Turbulent Free Shear Layer **J96-048**

Thrust Generation due to Airfoil Flapping **J96-051**

Boundary Conditions for the Vorticity-Velocity Formulation of Navier-Stokes Equations **J96-064**

Step Response of Pressure-Sensitive Paints **J96-081**

Temporal Evolution of Three-Dimensional Vortex Breakdown from Steady, Axisymmetric Solutions **J96-099**

Experimental and Numerical Investigations of Dynamic Stall on a Pitching Airfoil **J96-153**

Limitations of Traditional Finite Volume Discretizations for Unsteady Computational Fluid Dynamics **J96-167**
 Parametric Effects on Lift Force of an Airfoil in Unsteady Freestream **J96-172**
 Three-Dimensional Wake Formations Behind a Family of Regular Polygonal Plates **J96-180**
 Simulations of Particle Dynamics in a Confined Shear Flow **J96-183**
 Unsteady Pressure Loads Generated by Swept-Shock-Wave/Boundary-Layer Interactions **J96-185**
 Examination of Vortex Deformation During Blade-Vortex Interaction **J96-187**
 Simulating Moth Wing Aerodynamics: Towards the Development of Flapping-Wing Technology **J96-212**
 Unsteady Aerodynamics Associated with a Horizontal-Axis Wind Turbine **J96-220**
 Analysis of Compressible Light Dynamic Stall Flow at Transitional Reynolds Numbers **J96-221**
 Analysis of Unsteady Supersonic Viscous Flows by a Shock-Fitting Technique **J96-222**
 Unsteady Aerodynamic Model of Flapping Wings **J96-223**
 Sensitivity Analysis of the Aeroacoustic Response of Turbomachinery Blade Rows **J96-240**
 Low-Reynolds-Number Separation on an Airfoil **J96-243**
 Eigenmode Analysis in Unsteady Aerodynamics: Reduced-Order Models **J96-244**
 Flow Visualization of an Oscillating Airfoil with Sawtooth Trailing Edge **J96-272**
 Two-Dimensional Model for Spark Discharge Simulation in Air **J96-285**
 Pressure Fluctuations in an Unstable Confined Jet **J96-304**
 Pressure Field Around a Rectangular Supersonic Jet in Screech **J96-314**
 Unsteady Flow Calculations with a Multigrid Navier-Stokes Method **J96-321**
 Computation of Quadrupole Noise Using Acoustic Analogy **J96-357**
 Algebraic Turbulence Model Simulations of Supersonic Open-Cavity Flow Physics **J96-358**
 Efficient Foil Propulsion Through Vortex Control **J96-366**
 Controlled Leading-Edge Suction for Management of Unsteady Separation over Pitching Airfoils **J96-368**
 Interactions of a Vortex with an Oscillating Leading Edge **J96-391**
Viscous Non-Boundary-Layer Flows
 Comment on "Rise of Total Pressure in Frictional Flow" **J95-119**
 Reply by the Author to B. W. van Oudheusden **J95-119**
 Solution-Adaptive Cartesian Cell Approach for Viscous and Inviscid Flows **J96-147**
 Evaluation of the Dynamic Model for Simulations of Compressible Decaying Isotropic Turbulence **J96-154**
 Solution for Spin-Up from Rest of Liquid with a Free Surface **J96-224**
 Explicit Algebraic Stress Model of Turbulence with Anisotropic Dissipation **J96-340**
 Proving Algorithm Symmetry for Flows Exhibiting Symmetry Breaking **J96-343**
Vortices
 Comment on "Self-Excited Wire Method for the Control of Turbulent Mixing Layers" **J95-161**
 Improving Curved Subsonic Diffuser Performance with Vortex Generators **J96-008**

Use of a Wake-Integral Method for Computational Drag Analysis **J96-026**
 Cinematic Particle Image Velocimetry of High-Reynolds-Number Turbulent Free Shear Layer **J96-048**
 Investigation of High-Order Upwind Differencing for Vortex Convection **J96-052**
 Boundary Conditions for the Vorticity-Velocity Formulation of Navier-Stokes Equations **J96-064**
 Study of Aircraft Wake Vortex Behavior Near the Ground **J96-089**
 Temporal Evolution of Three-Dimensional Vortex Breakdown from Steady, Axisymmetric Solutions **J96-099**
 Systematic Study of the Correlation Between Geometrical Disturbances and Flow Asymmetries **J96-118**
 Flow over an Obstacle Emerging from the Wall of a Channel **J96-145**
 Interaction of Missile Nose-Tip Vortices with a Control Surface **J96-155**
 Parametric Effects on Lift Force of an Airfoil in Unsteady Freestream **J96-172**
 Three-Dimensional Wake Formations Behind a Family of Regular Polygonal Plates **J96-180**
 Stability of Leading-Edge Vortex Pair on a Slender Delta Wing **J96-186**
 Examination of Vortex Deformation During Blade-Vortex Interaction **J96-187**
 Role of Secondary Vorticity in Parallel Blade-Vortex Interactions **J96-188**
 Numerical Investigation of Supersonic Wing-Tip Vortices **J96-189**
 Trailing-Edge Jet Control of Leading-Edge Vortices of a Delta Wing **J96-225**
 Three-Dimensional Velocity Measurements Within Görtler Vortices **J96-267**
 Momentum and Vortex Theory of Rotor Blade Wakes **J96-269**
 Vortex-Wake Characteristics of a Supersonic Transport Wing Planform at Mach 2.5 **J96-273**
 Interaction of Supersonic Wing-Tip Vortices with a Normal Shock **J96-288**
 Enhancement of the Leading-Edge Separation Vortices by Trailing-Edge Lateral Blowing **J96-300**
 Kármán Vortex Development: Relation to Symmetry and Circulation of Transition Vortices **J96-305**
 Counter-Rotating Structures over a Delta Wing **J96-307**
 Recursive Numerical Algorithm for Conformal Mapping in Two-Dimensional Hydrodynamics **J96-317**
 Accurate Development of Leading-Edge Vortex Using an Embedded Conical Grid **J96-320**
 Bow Shock/Jet Interaction in Compressible Transverse Injection Flowfields **J96-342**
 Algebraic Turbulence Model Simulations of Supersonic Open-Cavity Flow Physics **J96-358**
 Efficient Foil Propulsion Through Vortex Control **J96-366**
 Large-Eddy Simulations of the Vortex-Pair Breakup in Aircraft Wakes **J96-369**
 Improved Jet Coverage Through Vortex Cancellation **J96-388**
 Effects of Leading-Edge Lateral Blowing on Delta Wing Aerodynamics **J96-396**
 Computational Study of the Flowfields Associated with Oblique Shock/Vortex Interactions **J96-407**
 Comment on the Vorticity Jump Across a Shock Wave **J96-424**
Wave Motion and Sloshing
 Aeroelastic Stability of a Beam Traveling in a Tunnel Lined with Resonators **J96-316**

Guidance, Control, and Dynamics Technology

Computer Science

Navier-Stokes Simulations of Jet Flows on a Network of Workstations **J96-114**

Computer Systems

Automation of Some Operations of a Wind Tunnel Using Artificial Neural Networks **J96-066**

Control System Design

Integrated Optimum Design of Structure and H^∞ Control System **J96-022**
 Alternative Control Logic for Type-II Variable-Stiffness System **J96-035**
 Semiactive Vibration Suppression by Variable-Damping Members **J96-055**
 Shape and Placement of Piezoelectric Sensors for Panel Flutter Limit-Cycle Suppression **J96-133**
 Partitioned Model Reduction for Large Space Structural Control Problem **J96-334**
 Distributed Modeling and Actuator Location for Piezoelectric Control Systems **J96-350**

Control System Effectors

Actuator with Built-In Viscous Damping for Isolation and Structural Control **J96-018**

Control System Sensors

Implementation of an Adaptive Piezoelectric Sensor/actuator **J96-328**

Dynamics

Simplified Calculation of Eigenvector Derivatives with Repeated Eigenvalues **J96-135**
 Eigenvector Derivatives of Structures with Rigid Body Modes **J96-171**
 Constrained Layer Damping of Tubular Truss Members **J96-230**
 Intrinsic Equations for the Nonlinear Dynamics of Space Beams **J96-256**
 Partitioned Model Reduction for Large Space Structural Control Problem **J96-334**

Optimization Techniques

Physical Programming: Effective Optimization for Computational Design **J96-021**
 Infeasible Path Optimal Design Methods with Applications to Aerodynamic Shape Optimization **J96-037**
 Neural Networks with Modified Backpropagation Learning Applied to Structural Optimization **J96-062**
 New Method for Deriving Eigenvalue Rate with Respect to Support Location **J96-137**
 Optimization for Minimum Sensitivity to Uncertain Parameters **J96-232**

Structural Control

Curved Piezoactuator Model for Active Vibration Control of Cylindrical Shells **J96-160**
 Constrained Layer Damping of Tubular Truss Members **J96-230**
 Modal Control of Piezolaminated Anisotropic Rectangular Plates Part 2: Control Theory **J96-291**
 Implementation of an Adaptive Piezoelectric Sensor/actuator **J96-328**
 Vibration Characteristics of Partially Covered Double-Sandwich Cantilever Beam **J96-418**

System Identification

- Finite Element Model Tuning Using Automated Structural Optimization System Software J96-060
- Optimal Sensor Location in Active Control of Flexible Structures J96-134
- Structural Damage Detection Using Real-Time Modal Parameter Identification Algorithm J96-373

Interdisciplinary Topics**Analytical and Numerical Methods**

- Optimization of Coupled Systems: A Critical Overview of Approaches J96-001
- Application of the Finite Element Method to Acoustic Scattering Problems J96-003
- Calculation of Streaklines for Time Periodic Flows J96-010
- Hybrid Prismatic/Tetrahedral Grid Generation for Viscous Flows Around Complex Geometries J96-047
- Chemical Laser Modeling with Genetic Algorithms J96-053
- Neural Networks with Modified Backpropagation Learning Applied to Structural Optimization J96-062
- Acceleration of Iterative Algorithms on Highly Clustered Grids J96-108
- Adaptive Prismatic-Tetrahedral Grid Refinement and Redistribution for Viscous Flows J96-110
- Time-Domain Impedance Boundary Conditions for Computational Aeroacoustics J96-144
- Solution-Adaptive Cartesian Cell Approach for Viscous and Inviscid Flows J96-147
- Limitations of Traditional Finite Volume Discretizations for Unsteady Computational Fluid Dynamics J96-167
- Use of the Energy Flow Concept in Vibration Design J96-196
- Modeling of Dust Entrainment by High-Speed Airflow J96-218
- Viscoelastic Analysis of Thick-Walled Filament-Wound Composite Cylinders with Elevated Temperatures J96-236
- Analytical Solution for Low-Velocity Impact Response of Composite Plates J96-252
- Hybrid Computational Model for Noise Propagation Through a Fuselage Boundary Layer J96-278
- Effect of Correlated Precision Errors on Uncertainty of a Subsonic Venturi Calibration J96-289
- Comparison of Local and Global Approximations for Reliability Estimation J96-336
- Practical Complete Modal Space and Its Applications J96-351

CAD/CAM

- Physical Programming: Effective Optimization for Computational Design J96-021
- Generalized Hybrid Method for Fuzzy Multiobjective Optimization of Engineering Systems J96-263
- Constraint Handling in Genetic Search Using Expression Strategies J96-380

Lasers and Laser Applications

- Chemical Laser Modeling with Genetic Algorithms J96-053
- Application of Absorption Filter Planar Doppler Velocimetry to Sonic and Supersonic Jets J96-068
- Demonstration and Characterization of Filtered Rayleigh Scattering for Planar Velocity Measurements J96-069

- Complete Three-Dimensional Multiparameter Mapping of a Supersonic Ramp Fuel Injector Flowfield J96-071
- Planar OH Density and Apparent Temperature Measurements in a Supersonic Combusting Flow J96-072
- Simultaneous Water Vapor Concentration and Temperature Measurements Using 1.31 μm Diode Lasers J96-075
- Scanned- and Fixed-Wavelength Absorption Diagnostics for Combustion Measurements Using Multiplexed Diode Lasers J96-076
- Long-Range Schmidt-Cassegrain Laser Velocimeter for Large Wind-Tunnel Applications J96-080
- OH Imaging in a Lean Burning High-Pressure Combustor J96-095
- Fluorescence Velocity Measurements in the Interior of a Hydrogen Arcjet Nozzle J96-132
- Laser Doppler Anemometer Measurements of Turbulent Boundary Layer over a Riblet Surface J96-156
- Holographic Interferometric Tomography for Limited Data Reconstruction J96-158
- Particle Size Distribution Technique Using Conventional Laser Doppler Velocimetry Measurements J96-190
- Continuous Wave Hydrogen Fluoride Overtone Lasing Saturation Effects on Fundamental Gain Suppression J96-191
- Continuous Optical Discharge Stabilized by Gas Flow in Weakly Focused Laser Beam J96-245
- Fundamental Gain Suppression Mechanisms in a Continuous Wave Hydrogen Fluoride Overtone Laser J96-246
- Heuristic Method for Evaluating Coil Performance J96-247
- Computer-Controlled Multiparameter Flowfield Measurements Using Planar Laser-Induced Iodine Fluorescence J96-248
- Visualization and Analysis of Bow Shocks in a Supero-orbital Expansion Tube J96-346
- Rayleigh Scattering Technique for Simultaneous Measurements of Velocity and Thermodynamic Properties J96-370
- Power Dependence of Chemical Oxygen-Iodine Lasers on Iodine Dissociation J96-410
- Development of a Rayleigh Scattering Measurement System for Hypersonic Wind-Tunnel Applications J96-422

Reliability, Maintainability, and Logistics Support

- Analytical and Experimental Comparison of Probabilistic and Deterministic Optimization J96-234
- Structural Synthesis with Reliability Constraints Using Approximation Concepts J96-253
- Comparison of Local and Global Approximations for Reliability Estimation J96-336

Research Facilities and Instrumentation

- Mass Spectrometer Measurements of Test Gas Composition in a Shock Tunnel J96-033
- Calibration of Preston Tubes J96-034
- Automation of Some Operations of a Wind Tunnel Using Artificial Neural Networks J96-066
- Demonstration and Characterization of Filtered Rayleigh Scattering for Planar Velocity Measurements J96-069
- Quantitative Measurements of Internal Circulation in Droplets Using Flow Tagging Velocimetry J96-070
- Planar OH Density and Apparent Temperature Measurements in a Supersonic Combusting Flow J96-072

- Comparison of Planar Fluorescence Measurements and Computational Modeling of a Shock-Layer Flow J96-073
- Initial Experimental Study of Pulsed Electron Beam Fluorescence J96-074
- Tunable Diode Laser Measurements on Nitric Oxide in a Hypersonic Wind Tunnel J96-077
- Infrared Emission from High Temperature $\text{H}_2\text{O}(\text{v}_2)$: A Diagnostic for Concentration and Temperature J96-078
- Atomic Oxygen Line Shape Measurement at 130 nm with Raman-Shifted Laser J96-079
- Three-Component Force Balance for Flows of Millisecond Duration J96-090
- Single-Pulse Temperature Measurements in Turbulent Flame Using Laser-Induced O_2 Fluorescence J96-096
- Evaluation of Correlated Bias Approximations in Experimental Uncertainty Analysis J96-157
- Holographic Interferometric Tomography for Limited Data Reconstruction J96-158
- Modeling Mass Entrainment in a Quasi-One-Dimensional Shock Tube Code J96-203
- Asymmetric Systematic Uncertainties in the Determination of Experimental Uncertainty J96-226
- Methods for Visualizing Hypersonic Shock-Wave/Boundary-Layer Interaction Using Electrical Discharges J96-227
- Computer-Controlled Multiparameter Flowfield Measurements Using Planar Laser-Induced Iodine Fluorescence J96-248
- Effect of Correlated Precision Errors on Uncertainty of a Subsonic Venturi Calibration J96-289
- Counter-Rotating Structures over a Delta Wing J96-307
- Visualization and Analysis of Bow Shocks in a Supero-orbital Expansion Tube J96-346
- Practical Complete Modal Space and Its Applications J96-351
- Rayleigh Scattering Technique for Simultaneous Measurements of Velocity and Thermodynamic Properties J96-370
- Multiple-Source Schlieren Noise Reduction Measurements J96-389
- Experimental Studies of Magnetic Levitation Train Aerodynamics J96-395
- Tunnel-Induced Gradients and Their Effect on Drag J96-411
- Development of a Rayleigh Scattering Measurement System for Hypersonic Wind-Tunnel Applications J96-422

Sensor Systems

- Scanned- and Fixed-Wavelength Absorption Diagnostics for Combustion Measurements Using Multiplexed Diode Lasers J96-076
- Holographic Interferometric Tomography for Limited Data Reconstruction J96-158

Launch Vehicle and Missile (LV/M) Technology**Testing, Flight and Ground**

- Evaluation of Correlated Bias Approximations in Experimental Uncertainty Analysis J96-157
- Asymmetric Systematic Uncertainties in the Determination of Experimental Uncertainty J96-226
- Effect of Correlated Precision Errors on Uncertainty of a Subsonic Venturi Calibration J96-289

Vibration

- Probabilistic Component Mode Synthesis of Nondeterministic Substructures J96-125

- Eigenvector Derivatives with Repeated Eigenvalues Using Generalized Inverse Technique **J96-349**

Propulsion

Airbreathing Propulsion

- Improving Curved Subsonic Diffuser Performance with Vortex Generators **J96-008**
 Simultaneous Water Vapor Concentration and Temperature Measurements Using 1.31 μm Diode Lasers **J96-075**
 OH Imaging in a Lean Burning High-Pressure Combustor **J96-095**
 Computation of Sound Radiating from Engine Inlets **J96-141**
 Simulating Heat Addition via Mass Addition in Variable Area Compressible Flows **J96-168**
 Multiaxis Fluidic Thrust Vector Control of a Supersonic Jet Using Counterflow **J96-266**
 Coaxial Jets from Lobed-Mixer Nozzles **J96-283**
 Modeling Influences of Inlet Swirl Profiles on Dump Combustor Flows **J96-420**

Combustion and Combustor Designs

- Simulating Heat Addition via Mass Addition in Variable Area Compressible Flows **J96-168**
 Images of Dissipation Layers to Quantify Mixing Within a Turbulent Jet **J96-405**

Combustion Instability

- Near-Limit Oscillations of Spherical Diffusion Flames **J96-219**
 Acoustic Response of Droplet Flames to Pressure Oscillations **J96-287**

Droplet Characterization

- Comment on "Laminar Flow Past Three Closely Spaced Monodisperse Spheres or Nonevaporating Drops" **J91-006**
 Quantitative Measurements of Internal Circulation in Droplets Using Flow Tagging Velocimetry **J96-070**
 Particle Size Distribution Technique Using Conventional Laser Doppler Velocimetry Measurements **J96-190**

Electric and Advanced Space Propulsion

- Fluorescence Velocity Measurements in the Interior of a Hydrogen Arcjet Nozzle **J96-132**
 Computational and Experimental Investigations of Rarefied Flows in Small Nozzles **J96-367**

Injector Design and Characterization

- Complete Three-Dimensional Multiparameter Mapping of a Supersonic Ramp Fuel Injector Flowfield **J96-071**

Ramjet Combustors

- Simulations of Particle Dynamics in a Confined Shear Flow **J96-183**

Ramjets and Scramjets

- Experimental Investigation of Supersonic Gaseous Injection into a Supersonic Freestream **J96-050**
 Planar OH Density and Apparent Temperature Measurements in a Supersonic Combusting Flow **J96-072**
 Free Shear Layer Interaction with an Expansion-Compression Wave Pair **J96-087**
 Bow Shock/Jet Interaction in Compressible Transverse Injection Flowfields **J96-342**

Supersonic Combustion

- Experimental Study of a Compressible Counter-current Turbulent Shear Layer **J96-112**
 Aeroacoustic Properties of a Supersonic Diamond-Shaped Jet **J96-242**

Transient Combustion and Detonation

- Near-Limit Oscillations of Spherical Diffusion Flames **J96-219**

Space Technology

Aerobraking Configurations/ Aerothermodynamics

- Comparison of Maximum Entropy Direct Simulation Monte Carlo Code with Flowfield Measurements **J96-216**

Space Experiments

- Statistical Saturation of Buoyant Flow Induced by a Fluctuating Acceleration **J96-152**

Space Systems

- Electrothermoelastic Behavior of Piezoelectric Coupled Cylinders **J96-249**

Spacecraft Structural Configuration, Design, and Analysis

- Composite Sandwich Structure Optimization with Application to Satellite Components **J96-094**

Spacecraft Test and Evaluation

- New Method for the Improvement of Measured Modes Through Orthogonalization **J96-138**

Structural Mechanics and Materials

Aeroelasticity and Control

- Effect of Concentrated Mass on Stability of Cantilevers Under Rocket Thrust **J95-080**
 Shape Control of Vibrating Simply Supported Rectangular Plates **J96-016**
 Suppression of Nonlinear Panel Flutter at Supersonic Speeds and Elevated Temperatures **J96-054**
 Supersonic Flutter Analysis of Stiffened Isotropic and Anisotropic Panels **J96-101**
 Nonclassical Effects on Divergence and Flutter of Anisotropic Swept Aircraft Wings **J96-120**
 Time-Domain Analysis of Low-Speed Airfoil Flutter **J96-159**
 Active Panel Flutter Suppression Using Self-Sensing Piezoactuators **J96-192**
 Aeroelastic Stability of a Beam Traveling in a Tunnel Lined with Resonators **J96-316**
 Accurate Numerical Integration of State-Space Models for Aeroelastic Systems with Free Play **J96-347**

Dynamic Model Analysis

- Comment on "Vibration and Buckling of Flexible Rotating Beams" **J95-084**
 Reply by Authors to A. Flax **J95-084**
 Identification of Impact Force and Location Using Distributed Sensors **J96-019**
 Semiactive Vibration Suppression by Variable-Damping Members **J96-055**
 Iterative Least-Squares Calculation for Modal Eigenvector Sensitivity **J96-059**
 Finite Element Model Tuning Using Automated Structural Optimization System Software **J96-060**
 Fictitious Mass Element in Structural Dynamics **J96-093**

- Two-Step Component-Mode Synthesis for the Eigensolution of Large Systems **J96-235**
 Central and Noncentral Normal Impact on Orthotropic Composite Cylindrical Shells **J96-250**

- Component Mode Synthesis for Nonclassically Damped Systems **J96-257**

- One-Dimensional Finite Elements Based on the Daubechies Family of Wavelets **J96-261**

- Explicit Unconditionally Stable Approaches for Built-Up Shell Structural Configurations **J96-265**

- Analytical Model Updating and Model Reduction **J96-310**

- Governing Equations of a Stiffened Laminated Inhomogeneous Conical Shell **J96-330**

- Integral Formulas for Non-Self-Adjoint Distributed Dynamic Systems **J96-332**

- Accurate Numerical Integration of State-Space Models for Aeroelastic Systems with Free Play **J96-347**

- Eigenvector Derivatives with Repeated Eigenvalues Using Generalized Inverse Technique **J96-349**

- Efficient Eigenvector Sensitivities by a New Procedure Based on Lanczos Vectors **J96-376**

Flexible and Active Structures

- Comment on "Vibration and Buckling of Flexible Rotating Beams" **J95-084**

- Reply by Authors to A. Flax **J95-084**

- Analysis of Piezoelectric Structures with Laminated Piezoelectric Triangle Shell Elements **J96-015**

- Shape Control of Vibrating Simply Supported Rectangular Plates **J96-016**

- Development of a Polymeric Piezoelectric C-Block Actuator Using Hybrid Optimization Technique **J96-017**

- Actuator with Built-In Viscous Damping for Isolation and Structural Control **J96-018**

- Alternative Control Logic for Type-II Variable-Stiffness System **J96-035**

- Suppression of Nonlinear Panel Flutter at Supersonic Speeds and Elevated Temperatures **J96-054**

- Semiactive Vibration Suppression by Variable-Damping Members **J96-055**

- Modeling Nonaxisymmetric Off-Design Shapes of Large Scientific Balloons **J96-061**

- Dynamic Effects of Piezoactuators on the Cylindrical Shell Response **J96-121**

- Three-Dimensional Analytical Solutions for Coupled Thermoelastoelectric Response of Multilayered Cylindrical Shells **J96-122**

- Optimal Sensor Location in Active Control of Flexible Structures **J96-134**

- Curved Piezoactuator Model for Active Vibration Control of Cylindrical Shells **J96-160**

- Active Panel Flutter Suppression Using Self-Sensing Piezoactuators **J96-192**

- Coupled Layerwise Analysis of Thermopiezoelectric Composite Beams **J96-193**

- Stability of Gyroelastic Beams **J96-199**

- Parallel Computing for Analysis of Variable Geometry Trusses **J96-228**

- Electrothermoelastic Behavior of Piezoelectric Coupled Cylinders **J96-249**

- Modal Control of Piezolaminated Anisotropic Rectangular Plates Part 1: Modal Transducer Theory **J96-290**

- Modal Control of Piezolaminated Anisotropic Rectangular Plates Part 2: Control Theory **J96-291**

- Finite Element Model for Active Control of Intelligent Structures **J96-292**

- Micromechanics of Composites with Shape Memory Alloy Fibers in Uniform Thermal Fluids **J96-294**

- Optimum Placement of Piezoelectric Sensor/Actuator for Vibration Control of Laminated Beams **J96-296**
 Implementation of an Adaptive Piezoelectric Sensor/actuator **J96-328**
 Elastic Wave Generation by Piezoceramic Patches **J96-329**
 Distributed Modeling and Actuator Location for Piezoelectric Control Systems **J96-350**
 Layerwise Mechanics and Finite Element Model for Laminated Piezoelectric Shells **J96-371**
 Maysel's Formula Generalized for Piezoelectric Vibrations: Application to Thin Shells of Revolution **J96-378**
 Modeling Piezoceramic Actuation of Beams in Torsion **J96-412**

Materials Structural Properties

- Ballistic Impact Response for Two-Step Braided Three-Dimensional Textile Composites **J96-058**
 Viscoelastic Material Response with a Fractional-Derivative Constitutive Model **J96-091**
 Finite Element Analysis of Laminated Composites Using an Unmixing-Mixing Viscoplastic Model **J96-100**
 Modal Synthesis When Modeling Damping by Use of Fractional Derivatives **J96-162**
 Improved Theory for Contact Indentation of Sandwich Panels **J96-194**
 Micromechanics of Composites with Shape Memory Alloy Fibers in Uniform Thermal Fluids **J96-294**
 Relationship of Anisotropic and Isotropic Materials for Antiplane Problems **J96-393**

Structural Composite Materials

- Identification of Impact Force and Location Using Distributed Sensors **J96-019**
 Efficient Modeling of Postbuckling Delamination Growth in Composite Laminates Using Plate Elements **J96-024**
 Structure and Properties of Three-Dimensional Braided Composites Including Axial Yarns **J96-036**
 Postprocess Method Using Displacement Field of Higher Order Laminated Composite Plate Theory **J96-056**
 Analysis of Cracked Aluminum Plates Repaired with Bonded Composite Patches **J96-057**
 Ballistic Impact Response for Two-Step Braided Three-Dimensional Textile Composites **J96-058**
 Semianalytical Differential Quadrature Solution for Free Vibration Analysis of Rectangular Plates **J96-092**
 Composite Sandwich Structure Optimization with Application to Satellite Components **J96-094**
 Finite Element Analysis of Laminated Composites Using an Unmixing-Mixing Viscoplastic Model **J96-100**
 Supersonic Flutter Analysis of Stiffened Isotropic and Anisotropic Panels **J96-101**
 Effects of Geometries, Clearances, and Friction on the Composite Multipin Joints **J96-136**
 Vibrations and Buckling of Cross-Ply Nonsymmetric Laminated Composite Beams **J96-164**
 Eigenvector Derivatives of Structures with Rigid Body Modes **J96-171**
 Coupled Layerwise Analysis of Thermopiezoelectric Composite Beams **J96-193**
 Improved Theory for Contact Indentation of Sandwich Panels **J96-194**
 Delamination Buckling and Postbuckling of Composite Cylindrical Shells **J96-200**
 Calculation of Interlaminar Stresses in Laminated Plates Using Walsh Transforms **J96-205**

- Iterative Calculation of the Transverse Shear Distribution in Laminated Composite Beams **J96-206**
 Determination of Rigidities of Fiber-Reinforced Plastic Laminates Using Holographic Interferometry **J96-207**
 Free Vibration of Thick Generally Laminated Cantilever Quadrilateral Plates **J96-229**
 Bimodal Bound of System Reliability for Random Composite Structures **J96-231**
 Viscoelastic Analysis of Thick-Walled Filament-Wound Composite Cylinders with Elevated Temperatures **J96-236**
 Electrothermoelastic Behavior of Piezoelectric Coupled Cylinders **J96-249**
 Central and Noncentral Normal Impact on Orthotropic Composite Cylindrical Shells **J96-250**
 Thick Beam Theory and Finite Element Model with Zig-Zag Sublaminar Approximations **J96-251**
 Analytical Solution for Low-Velocity Impact Response of Composite Plates **J96-252**
 Effect of Ply-Drop Configuration on Delamination Strength of Tapered Composite Structures **J96-255**
 Minimum Weight Design of Laminated Composite Plates Subject to Strength Constraint **J96-262**
 Minimization of the Mass of Multilayer Plates at Impulse Loading **J96-264**
 Modal Control of Piezolaminated Anisotropic Rectangular Plates Part 1: Modal Transducer Theory **J96-290**
 Modal Control of Piezolaminated Anisotropic Rectangular Plates Part 2: Control Theory **J96-291**
 Finite Element Model for Active Control of Intelligent Structures **J96-292**
 Multidomain Modeling and Analysis of Delaminated Stiffened Composite Shells **J96-293**
 Micromechanics of Composites with Shape Memory Alloy Fibers in Uniform Thermal Fluids **J96-294**
 Cross-Sectional Analysis of Composite Beams Including Large Initial Twist and Curvature Effects **J96-295**
 Enriched Finite Elements for Regions with Multiple, Interacting Singular Fields **J96-297**
 Three-Dimensional Analysis of Simply Supported Laminated Cylindrical Shells with Arbitrary Thickness **J96-308**
 Experimental Investigation on Blade-Stiffened Panel with Stiffener-to-Skin Fiber Stitching **J96-309**
 Governing Equations of a Stiffened Laminated Inhomogeneous Conical Shell **J96-330**
 Modified Trajectory Method for Practical Global Optimization Problems **J96-331**
 Local Buckling of Delaminated Composite Sandwich Plates **J96-338**
 Maysel's Formula Generalized for Piezoelectric Vibrations: Application to Thin Shells of Revolution **J96-378**
 Effect of Interfacial Imperfection on Buckling and Bending Behavior of Composite Laminates **J96-413**
 Nonlinear Analysis of Pressurized Spinning Fiber-Reinforced Tori **J96-414**
 Stress Fields in General Composite Laminates **J96-415**

Structural Design

- Optimization of Coupled Systems: A Critical Overview of Approaches **J96-001**
 Development of a Polymeric Piezoelectric C-Block Actuator Using Hybrid Optimization Technique **J96-017**
 Integrated Optimum Design of Structure and H^∞ Control System **J96-022**

- Postprocess Method Using Displacement Field of Higher Order Laminated Composite Plate Theory **J96-056**
 Shape Optimization with Buckling and Stress Constraints **J96-067**
 Cable-Stiffened Pantographic Deployable Structures Part 1: Triangular Mast **J96-123**
 Robust Design for Unconstrained Optimization Problems Using the Taguchi Method **J96-163**
 Improved Transient Response Approximation for General Damped Systems **J96-198**
 Eigenvector Derivatives for Doubly Repeated Eigenvalues **J96-238**
 Structural Synthesis with Reliability Constraints Using Approximation Concepts **J96-253**
 Minimum Weight Design of Laminated Composite Plates Subject to Strength Constraint **J96-262**
 Generalized Hybrid Method for Fuzzy Multiobjective Optimization of Engineering Systems **J96-263**
 Minimization of the Mass of Multilayer Plates at Impulse Loading **J96-264**
 Cross-Sectional Analysis of Composite Beams Including Large Initial Twist and Curvature Effects **J96-295**
 Stochastic Optimization Using the Stochastic Preconditioned Conjugate Gradient Method **J96-311**
 Relationship of Anisotropic and Isotropic Materials for Antiplane Problems **J96-393**
 Stress Fields in General Composite Laminates **J96-415**

Structural Durability (Including Fatigue, Fracture, and Environmental Degradation)

- Efficient Modeling of Postbuckling Delamination Growth in Composite Laminates Using Plate Elements **J96-024**
 Analysis of Cracked Aluminum Plates Repaired with Bonded Composite Patches **J96-057**
 Ballistic Impact Response for Two-Step Braided Three-Dimensional Textile Composites **J96-058**
 Bimodal Bound of System Reliability for Random Composite Structures **J96-231**
 Damage Localization in Structures Without Baseline Modal Parameters **J96-254**
 Effect of Ply-Drop Configuration on Delamination Strength of Tapered Composite Structures **J96-255**
 Multidomain Modeling and Analysis of Delaminated Stiffened Composite Shells **J96-293**
 Local Buckling of Cracked and Pin-Loaded Plates **J96-337**
 Initial Fatigue Quality Confidence-Interval Approach for Determination of Inspection Intervals **J96-372**
 Structural Damage Detection Using Real-Time Modal Parameter Identification Algorithm **J96-373**
 Stress Fields in General Composite Laminates **J96-415**
 Damage Detection in Beam Structures Using Subspace Rotation Algorithm with Strain Data **J96-416**
 Minimum-Rank Optimal Update of Elemental Stiffness Parameters for Structural Damage Identification **J96-417**

Structural Dynamics and Characterization

- Comment on "Vibration and Buckling of Flexible Rotating Beams" **J95-084**
 Reply by Authors to A. Flax **J95-084**
 Iterative Least-Squares Calculation for Modal Eigenvector Sensitivity **J96-059**
 Finite Element Model Tuning Using Automated Structural Optimization System Software **J96-060**

- Semianalytical Differential Quadrature Solution for Free Vibration Analysis of Rectangular Plates **J96-092**
- Fictitious Mass Element in Structural Dynamics **J96-093**
- Supersonic Flutter Analysis of Stiffened Isotropic and Anisotropic Panels **J96-101**
- Mode Shape Expansion Techniques for Prediction: Experimental Evaluation **J96-124**
- Probabilistic Component Mode Synthesis of Nondeterministic Substructures **J96-125**
- Simplified Calculation of Eigenvector Derivatives with Repeated Eigenvalues **J96-135**
- New Method for Deriving Eigenvalue Rate with Respect to Support Location **J96-137**
- New Method for the Improvement of Measured Modes Through Orthogonalization **J96-138**
- Vibratory Characteristics of Pretwisted Cantilever Trapezoids of Unsymmetric Laminates **J96-161**
- Modal Synthesis When Modeling Damping by Use of Fractional Derivatives **J96-162**
- Eigenvector Derivatives of Structures with Rigid Body Modes **J96-171**
- Iterative Method for Calculating Derivatives of Eigenvectors **J96-173**
- Bounding the Transient Response of Structures to Uncertain Disturbances **J96-195**
- Use of the Energy Flow Concept in Vibration Design **J96-196**
- Optimal Ritz Vectors for Component Mode Synthesis Using the Singular Value Decomposition **J96-197**
- Improved Transient Response Approximation for General Damped Systems **J96-198**
- Determination of Rigidities of Fiber-Reinforced Plastic Laminates Using Holographic Interferometry **J96-207**
- Free Vibration of Thick Generally Laminated Cantilever Quadrilateral Plates **J96-229**
- Constrained Layer Damping of Tubular Truss Members **J96-230**
- Analytical and Experimental Comparison of Probabilistic and Deterministic Optimization **J96-234**
- Two-Step Component-Mode Synthesis for the Eigensolution of Large Systems **J96-235**
- Eigenvector Derivatives for Doubly Repeated Eigenvalues **J96-238**
- Central and Noncentral Normal Impact on Orthotropic Composite Cylindrical Shells **J96-250**
- Intrinsic Equations for the Nonlinear Dynamics of Space Beams **J96-256**
- Component Mode Synthesis for Nonclassically Damped Systems **J96-257**
- Accurate Computation of Design Sensitivities for Dynamically Loaded Structures with Displacement Constraints **J96-258**
- Estimation of Reciprocal Residual Flexibility from Experimental Modal Data **J96-259**
- One-Dimensional Finite Elements Based on the Daubechies Family of Wavelets **J96-261**
- Explicit Unconditionally Stable Approaches for Built-Up Shell Structural Configurations **J96-265**
- Optimum Placement of Piezoelectric Sensor/Actuator for Vibration Control of Laminated Beams **J96-296**
- Analytical Model Updating and Model Reduction **J96-310**
- Governing Equations of a Stiffened Laminated Inhomogeneous Conical Shell **J96-330**
- Integral Formulas for Non-Self-Adjoint Distributed Dynamic Systems **J96-332**
- Forced Random Parametric Vibration in Single-Degree-of-Freedom Systems **J96-333**
- Eigenvector Derivatives with Repeated Eigenvalues Using Generalized Inverse Technique **J96-349**
- Practical Complete Modal Space and Its Applications **J96-351**
- Improvement in Model Reduction Schemes Using the System Equivalent Reduction Expansion Process **J96-353**
- Structural Damage Detection Using Real-Time Modal Parameter Identification Algorithm **J96-373**
- Small Displacements About Equilibrium of a Beam Subjected to Large Static Loads **J96-375**
- Efficient Eigenvector Sensitivities by a New Procedure Based on Lanczos Vectors **J96-376**
- Primal and Mixed Variational Principles for Dynamics of Spatial Beams **J96-377**
- Maysel's Formula Generalized for Piezoelectric Vibrations: Application to Thin Shells of Revolution **J96-378**
- Vibration Characteristics of Cantilevered Thick Cylindrical Shallow Shells **J96-392**
- Nonlinear Analysis of Pressurized Spinning Fiber-Reinforced Tori **J96-414**
- Minimum-Rank Optimal Update of Elemental Stiffness Parameters for Structural Damage Identification **J96-417**
- Vibration Characteristics of Partially Covered Double-Sandwich Cantilever Beam **J96-418**
- Vibration and Stability of Simply Supported Elliptical Plates **J96-423**
- Structural Finite Elements**
- Analysis of Piezoelectric Structures with Laminated Piezoelectric Triangle Shell Elements **J96-015**
- Finite Element Analysis of Laminated Composites Using an Unmixing-Mixing Viscoplastic Model **J96-100**
- Effects of Geometries, Clearances, and Friction on the Composite Multipin Joints **J96-136**
- Vibrations and Buckling of Cross-Ply Nonsymmetric Laminated Composite Beams **J96-164**
- Use of the Energy Flow Concept in Vibration Design **J96-196**
- Optimal Ritz Vectors for Component Mode Synthesis Using the Singular Value Decomposition **J96-197**
- Improved Transient Response Approximation for General Damped Systems **J96-198**
- Calculation of Interlaminar Stresses in Laminated Plates Using Walsh Transforms **J96-205**
- Free Vibration of Thick Generally Laminated Cantilever Quadrilateral Plates **J96-229**
- Bimodal Bound of System Reliability for Random Composite Structures **J96-231**
- Two-Step Component-Mode Synthesis for the Eigensolution of Large Systems **J96-235**
- Topology Optimization with Superelements **J96-239**
- Thick Beam Theory and Finite Element Model with Zig-Zag Sublaminar Approximations **J96-251**
- Effect of Ply-Drop Configuration on Delamination Strength of Tapered Composite Structures **J96-255**
- One-Dimensional Finite Elements Based on the Daubechies Family of Wavelets **J96-261**
- Explicit Unconditionally Stable Approaches for Built-Up Shell Structural Configurations **J96-265**
- Finite Element Model for Active Control of Intelligent Structures **J96-292**
- Enriched Finite Elements for Regions with Multiple, Interacting Singular Fields **J96-297**
- Analytical Model Updating and Model Reduction **J96-310**
- Stochastic Optimization Using the Stochastic Preconditioned Conjugate Gradient Method **J96-311**
- Modified Trajectory Method for Practical Global Optimization Problems **J96-331**
- Integral Formulas for Non-Self-Adjoint Distributed Dynamic Systems **J96-332**
- Distributed Modeling and Actuator Location for Piezoelectric Control Systems **J96-350**
- Layerwise Mechanics and Finite Element Model for Laminated Piezoelectric Shells **J96-371**
- Damage Detection in Beam Structures Using Subspace Rotation Algorithm with Strain Data **J96-416**
- Structural Modeling**
- Shape Control of Vibrating Simply Supported Rectangular Plates **J96-016**
- Completed Beltrami-Michell Formulation for Analyzing Mixed Boundary Value Problems in Elasticity **J96-020**
- Postprocess Method Using Displacement Field of Higher Order Laminated Composite Plate Theory **J96-056**
- Analysis of Cracked Aluminum Plates Repaired with Bonded Composite Patches **J96-057**
- Modeling Nonaxisymmetric Off-Design Shapes of Large Scientific Balloons **J96-061**
- Viscoelastic Material Response with a Fractional-Derivative Constitutive Model **J96-091**
- Fictitious Mass Element in Structural Dynamics **J96-093**
- Optimal Ritz Vectors for Component Mode Synthesis Using the Singular Value Decomposition **J96-197**
- Delamination Buckling and Postbuckling of Composite Cylindrical Shells **J96-200**
- Iterative Calculation of the Transverse Shear Distribution in Laminated Composite Beams **J96-206**
- Thick Beam Theory and Finite Element Model with Zig-Zag Sublaminar Approximations **J96-251**
- Component Mode Synthesis for Nonclassically Damped Systems **J96-257**
- Cross-Sectional Analysis of Composite Beams Including Large Initial Twist and Curvature Effects **J96-295**
- Enriched Finite Elements for Regions with Multiple, Interacting Singular Fields **J96-297**
- Nonlinear Response of Long Orthotropic Tubes Under Bending Including the Brazier Effect **J96-298**
- Three-Dimensional Analysis of Simply Supported Laminated Cylindrical Shells with Arbitrary Thickness **J96-308**
- Partitioned Model Reduction for Large Space Structural Control Problem **J96-334**
- Deflection of Rectangular Orthotropic Plates Under Uniform Load **J96-348**
- Small Displacements About Equilibrium of a Beam Subjected to Large Static Loads **J96-375**
- Nonlinear Analysis of Imperfect Metallic and Laminated Cylinders Under Bending Loads **J96-379**
- Modeling Piezoceramic Actuation of Beams in Torsion **J96-412**
- Nonlinear Analysis of Pressurized Spinning Fiber-Reinforced Tori **J96-414**
- Minimum-Rank Optimal Update of Elemental Stiffness Parameters for Structural Damage Identification **J96-417**
- Structural Optimization**
- Optimization of Coupled Systems: A Critical Overview of Approaches **J96-001**
- Development of a Polymeric Piezoelectric C-Block Actuator Using Hybrid Optimization Technique **J96-017**

- Physical Programming: Effective Optimization for Computational Design **J96-021**
 Integrated Optimum Design of Structure and H^{∞} Control System **J96-022**
 Iterative Least-Squares Calculation for Modal Eigenvector Sensitivity **J96-059**
 Modeling Nonaxisymmetric Off-Design Shapes of Large Scientific Balloons **J96-061**
 Neural Networks with Modified Backpropagation Learning Applied to Structural Optimization **J96-062**
 Shape Optimization with Buckling and Stress Constraints **J96-067**
 Composite Sandwich Structure Optimization with Application to Satellite Components **J96-094**
 Aeroelastic Optimization of a Helicopter Rotor with Two-Cell Composite Blades **J96-126**
 New Method for Deriving Eigenvalue Rate with Respect to Support Location **J96-137**
 Robust Design for Unconstrained Optimization Problems Using the Taguchi Method **J96-163**
 Optimization for Minimum Sensitivity to Uncertain Parameters **J96-232**
 Quasistatic Optimal Actuator Placement with Minimum Worst Case Distortion Criterion **J96-233**
 Analytical and Experimental Comparison of Probabilistic and Deterministic Optimization **J96-234**
 Eigenvector Derivatives for Doubly Repeated Eigenvalues **J96-238**
 Topology Optimization with Superelements **J96-239**
 Structural Synthesis with Reliability Constraints Using Approximation Concepts **J96-253**
 Accurate Computation of Design Sensitivities for Dynamically Loaded Structures with Displacement Constraints **J96-258**
 Minimum Weight Design of Laminated Composite Plates Subject to Strength Constraint **J96-262**
 Generalized Hybrid Method for Fuzzy Multiobjective Optimization of Engineering Systems **J96-263**
 Minimization of the Mass of Multilayer Plates at Impulse Loading **J96-264**
 Stochastic Optimization Using the Stochastic Preconditioned Conjugate Gradient Method **J96-311**
 Modified Trajectory Method for Practical Global Optimization Problems **J96-331**
 Reliability-Based Optimization: A Proposed Analytical-Experimental Study **J96-335**

- Comparison of Local and Global Approximations for Reliability Estimation **J96-336**
 Computation of Derivatives of Repeated Eigenvalues and Corresponding Eigenvectors by Simultaneous Iteration **J96-352**
 Layerwise Mechanics and Finite Element Model for Laminated Piezoelectric Shells **J96-371**
 Efficient Eigenvector Sensitivities by a New Procedure Based on Lanczos Vectors **J96-376**
 Constraint Handling in Genetic Search Using Expression Strategies **J96-380**
 Inclusion of Transverse Shear Deformation in Optimum Design of Aircraft Wing Panels **J96-394**

Structural Stability

- Effect of Concentrated Mass on Stability of Cantilevers Under Rocket Thrust **J95-080**
 Frequency-Load Interaction of Geometrically Imperfect Curved Panels Subjected to Heating **J96-023**
 Efficient Modeling of Postbuckling Delamination Growth in Composite Laminates Using Plate Elements **J96-024**
 Vibrations and Buckling of Cross-Ply Nonsymmetric Laminated Composite Beams **J96-164**
 Stability of Gyroelastic Beams **J96-199**
 Delamination Buckling and Postbuckling of Composite Cylindrical Shells **J96-200**
 Dynamic Buckling of Long Thin Elastic Plate Under Rapidly Applied Shear Loading **J96-274**
 Multidomain Modeling and Analysis of Delaminated Stiffened Composite Shells **J96-293**
 Nonlinear Response of Long Orthotropic Tubes Under Bending Including the Brazier Effect **J96-298**
 Local Buckling of Cracked and Pin-Loaded Plates **J96-337**
 Local Buckling of Delaminated Composite Sandwich Plates **J96-338**
 Nonlinear Analysis of Imperfect Metallic and Laminated Cylinders Under Bending Loads **J96-379**
 Nonlinear Dynamic Buckling of a Cylindrical Shell Panel Model **J96-381**
 Inclusion of Transverse Shear Deformation in Optimum Design of Aircraft Wing Panels **J96-394**
 Effect of Interfacial Imperfection on Buckling and Bending Behavior of Composite Laminates **J96-413**
 Vibration and Stability of Simply Supported Elliptical Plates **J96-423**

Thermal Effects

- Coupled Layerwise Analysis of Thermopiezoelectric Composite Beams **J96-193**

Thermophysics and Heat Transfer

Aerothermodynamics/Thermal Protection

- Comment on "New Similarity Solutions for Hypersonic Boundary Layers with Application to Inlet Flows," Part 1 **J95-332**
 Comment on "New Similarity Solutions for Hypersonic Boundary Layers with Application to Inlet Flows," Part 2 **J95-332**
 Reply by the Author to Jack Pike **J95-332**
 Experimental Studies of Supersonic Film Cooling with Shock Wave Interaction **J96-044**
 Ionizational Nonequilibrium Induced by Neutral Chemistry in Air Plasmas **J96-271**

Computational Heat Transfer

- Matching Inviscid/Boundary-Layer Flowfields **J96-004**

Natural Convection

- Statistical Saturation of Buoyant Flow Induced by a Fluctuating Acceleration **J96-152**

Nonintrusive Diagnostics

- Quantitative Measurements of Internal Circulation in Droplets Using Flow Tagging Velocimetry **J96-070**
 Comparison of Planar Fluorescence Measurements and Computational Modeling of a Shock-Layer Flow **J96-073**
 Scanned- and Fixed-Wavelength Absorption Diagnostics for Combustion Measurements Using Multiplexed Diode Lasers **J96-076**
 Tunable Diode Laser Measurements on Nitric Oxide in a Hypersonic Wind Tunnel **J96-077**
 Atomic Oxygen Line Shape Measurement at 130 nm with Raman-Shifted Laser **J96-079**
 Single-Pulse Temperature Measurements in Turbulent Flame Using Laser-Induced O₂ Fluorescence **J96-096**

Thermochemistry and Chemical Kinetics

- Atomic Oxygen Line Shape Measurement at 130 nm with Raman-Shifted Laser **J96-079**

Thermophysical Properties

- Equilibrium Vibrational Properties of Ground State Nitrogen up to 35,000 K **J96-286**

Author Index

- Abarbanel, S., **J96-109**
 Abbitt, John D., **J96-081**
 Abid, Ridha, **J95-312, J96-164, J96-421**
 Abramovich, Haim, **J96-290, J96-291**
 Accorsi, Michael L., **J96-230**
 Acharya, Mukund, **J96-155, J96-368**
 Adams, Nikolaus A., **J96-107**
 Adelman, Howard M., **J96-232**
 Adib-Jahromi, Hamid R., **J96-230**
 Adrian, Ronald J., **J96-048**
 Akram, M., **J96-285**
 Al-Saadi, J., **J96-213**
 Alem, D., **J96-151**
 Alfredsson, K. S., **J96-196**
 Algrmissen, J., **J96-009**
 Allen, M. G., **J96-078, J96-075**

- Alrefai, Mah'd, **J96-368**
 Alvi, F. S., **J96-112, J96-242, J96-266**
 Alvin, Kenneth F., **J96-259**
 Anderson, Eric H., **J96-018**
 Anderson, R. C., **J96-095**
 Anderson, R. W., **J96-180**
 Andrew, Alan L., **J96-352**
 Andrews, Malcolm J., **J96-301**
 Antonia, R. A., **J96-156**
 Arakeri, Jaywant H., **J96-127**
 Arendt, C., **J96-057**
 Ash, Robert L., **J96-089**
 Atassi, Hafiz M., **J96-355, J96-356**
 Atluri, S. N., **J96-293, J96-377**
 Aubert, Stéphane, **J96-027**
 August, James A., **J96-348**
 Auriault, Laurent, **J96-144**
 Averill, R. C., **J96-251**

- Ayer, Frederique, **J96-059**
 Badcock, K. J., **J96-085**
 Baer, D. S., **J96-076**
 Baginski, Frank, **J96-061**
 Baird, J. P., **J96-337**
 Baker, William P., **J96-091**
 Balaras, Elias, **J96-176**
 Balling, R. J., **J96-001**
 Balmès, Etienne, **J96-197**
 Balow, F. A., **J96-031**
 Bangalore, Ashok, **J96-341**
 Barata, Jorge M. M., **J96-404**
 Barmashenko, B. D., **J96-410**
 Barre, S., **J96-151**
 Barter, J. W., **J96-029**
 Batra, R. C., **J96-016**
 Baum, J., **J96-169**
 Bayliss, A., **J96-175**
 Baysal, Oktay, **J96-275**

- Bechert, D. W., **J96-034, J96-166**
 Beiting, Edward J., **J96-367**
 Béliveau, Jean-Guy, **J96-059**
 Ben-Dor, G., **J96-065, J96-184, J96-344**
 Benmeddour, A., **J96-111**
 Benocci, Carlo, **J96-176**
 Beran, Phillip S., **J96-099**
 Bershader, Daniel, **J96-079**
 Bert, Charles W., **J96-092**
 Betti, Alexander, **J96-288**
 Beylich, Alfred E., **J96-149**
 Bhattacharyya, R., **J96-292**
 Bhumbra, Ravinder, **J96-260**
 Biggers, Sherrill B., Jr., **J96-297**
 Biringen, Sedat, **J96-402**
 Birman, Victor, **J96-294**
 Bishop, Alexis, **J96-346**
 Blaisdell, Gregory A., **J96-154**

- Blake, William K., *J96-355, J96-356*
 Bliss, Donald B., *J96-354*
 Böls, A., *J96-210*
 Bonnet, J. P., *J96-151*
 Bordelon, W. J., Jr., *J96-289*
 Boris, J. P., *J96-142, J96-214*
 Bosse, Albert, *J96-373*
 Botkin, M. E., *J96-067*
 Botting, Anthony D., *J96-255*
 Bowersox, Rodney D. W., *J96-050, J96-360, J96-397*
 Boyce, R. R., *J96-073*
 Boyd, Iain D., *J96-011, J96-367*
 Boyle, J. T., *J96-205*
 Braaten, Mark E., *J96-046*
 Bradshaw, P., *J93-252*
 Bragg, M. B., *J96-031, J96-303*
 Brei, Diann, *J96-017*
 Brendel, Michael, *J95-356*
 Brown, Andrew M., *J96-125*
 Brown, Kendall K., *J96-157*
 Brüggemann, D., *J96-009*
 Brusek, M., *J96-166*
 Brusniak, L., *J96-408*
 Buggele, Alvin E., *J96-066*
 Burcham, C. L., *J96-070*
 Burgreen, Greg W., *J96-275*
 Buter, Thomas A., *J96-397*
 Camarero, R., *J96-111*
 Candler, Graham V., *J96-215*
 Canfield, Robert A., *J96-060*
 Cappelli, Mark A., *J96-132*
 Carlson, Henry A., *J96-145*
 Carman, Greg, *J96-249*
 Carr, L. W., *J96-013*
 Carroll, Bruce F., *J96-081*
 Carroll, D. L., *J96-053, J96-191*
 Carter, Jonathan G., *J96-386*
 Casper, Jay, *J96-041*
 Çelik, Zeki Z., *J96-396*
 Cesnik, Carlos E. S., *J96-295*
 Cha, Don J., *J96-158*
 Cha, Soyoung S., *J96-158*
 Chandra, Suresh, *J96-116*
 Chandrasekhara, M. S., *J96-013, J96-221*
 Chang, Chen-Wen, *J96-309*
 Chang, E. J., *J96-183, J96-382*
 Chang, Fu-Kuo, *J96-019*
 Chatterjee, Animesh, *J96-026*
 Chattopadhyay, Aditi, *J96-017, J96-200*
 Cheatham, S., *J96-219*
 Chen, J. C., *J96-420*
 Chen, Lea-Der, *J96-326*
 Chen, Li, *J96-263*
 Chen, Qinghua, *J96-418*
 Chen, Su-huan, *J96-135*
 Chen, T. H., *J96-342*
 Chen, Ting-Yu, *J96-238*
 Chen, W. J., *J96-088*
 Chen, Xiaoqin, *J96-265*
 Cheng, H. K., *J96-170, J96-409*
 Cheng, Shou-Hsiung, *J96-338*
 Cheng, Zhen-qiang, *J96-413*
 Chiang, D. C., *J96-280*
 Chien, Larry S., *J96-226*
 Chiu, Chien-Erh, *J96-103*
 Cho, Maenghyo, *J96-056*
 Choi, Dochul, *J96-052*
 Choi, Keeyoung, *J96-019*
 Choi, Kwang-Yoon, *J96-108*
 Chokani, Ndaona, *J96-213, J96-400*
 Chopra, Indrajit, *J96-126, J96-412*
 Chow, Chuen-Yen, *J96-186*
 Chpoun, A., *J96-344*
 Chunduru, S. J., *J96-002*
 Chung, S. H., *J96-287*
 Chyu, C.-K., *J96-305*
 Cimbala, John M., *J96-390*
 Clark, Robert L., *J96-328, J96-419*
 Clemens, N. T., *J96-323*
 Coakley, T. J., *J93-252*
 Cobb, Richard G., *J96-060*
 Cogan, Scott, *J96-059*
 Coirier, William J., *J96-147*
 Cokljat, Davor, *J96-386*
 Coleman, H. W., *J96-157, J96-226, J96-289*
 Collicott, Steven H., *J96-389*
 Connell, Stuart D., *J96-046*
 Conner, Mark D., *J96-347*
 Conrad, R., *J96-245*
 Coton, F. N., *J96-187*
 Couston, D., *J96-403*
 Crane, Martin, *J96-205*
 Crowell, P. G., *J96-247*
 Cudney, H. H., *J96-234*
 Cummings, M. J., *J96-303*
 Cybyk, B. Z., *J96-214*
 Daniel, William J. T., *J96-090*
 Dankov, Emil T., *J96-274*
 Davi, G., *J96-415*
 Davis, D. O., *J96-312*
 Davis, Sanford, *J96-319*
 De Chant, Lawrence J., *J96-301*
 de Nicola, C., *J96-202*
 Debisschop, J. R., *J96-146*
 Decker, Arthur J., *J96-066*
 Deconinck, H., *J96-318*
 Degani, David, *J96-118*
 Degrez, G., *J96-318*
 DeJarmette, Fred R., *J96-004*
 Demetriades, Anthony, *J96-398, J96-399*
 Denison, M. Richard, *J96-218*
 DeStefano, Joel, *J96-094*
 Dewan, Anupam, *J96-127*
 Ding, Zhong, *J96-225*
 Dinkler, D., *J96-192*
 Disimile, Peter J., *J95-161, J96-098, J96-358*
 Djenidi, L., *J96-156*
 Djilali, N., *J96-097*
 Doan-Kim, S., *J96-403*
 Doebeling, Scott W., *J96-259, J96-417*
 Dolling, D. S., *J96-029, J96-323, J96-408*
 Donaldson, Joseph C., *J96-398*
 Döngi, F., *J96-192*
 Donohue, James M., *J96-071, J96-248*
 Doolan, C. J., *J96-203*
 Dowell, Earl H., *J96-244, J96-347*
 Dratler, D. I., *J96-364*
 Driscoll, James F., *J96-405*
 Drummond, J. Philip, *J96-068*
 Dulikravich, George S., *J96-108*
 Dunagan, Stephen E., *J96-080*
 Dutta, A., *J96-258*
 Dutton, J. C., *J96-087, J96-181, J96-182, J96-282, J96-342*
 Dwyer, Harry A., *J96-201*
 Eaton, J. A., *J96-003*
 Eckert, C., *J96-322*
 Edwards, J. R., *J96-116, J96-128*
 Eick, Chris D., *J95-084*
 Eisenberger, M., *J96-164*
 Ekaterinaris, J. A., *J96-221*
 Eldred, Lloyd B., *J96-091*
 Elliot, Gregory S., *J96-370*
 Emanuel, G., *J96-424*
 Emerson, David R., *J96-386*
 Enomoto, Norio, *J95-080*
 Eom, In-Sup, *J96-163*
 Epstein, Ronald J., *J96-354*
 Erkkila, J., *J96-247*
 Ern, Patricia, *J96-304*
 Everest, David, *J96-405*
 Exberger, Richard J., *J96-079*
 Fang, J. M., *J96-131*
 Fannelöp, Torstein K., *J96-401*
 Fasel, H. F., *J96-364*
 Feikema, Douglas A., *J96-405*
 Fenander, Åsa, *J96-162*
 Fenno, C. C., Jr., *J96-175*
 Ferrand, Pascal, *J96-027*
 Ferri, Aldo A., *J96-125*
 Finkelstein, N. D., *J96-069*
 Fisher, Shalom, *J96-373*
 Flax, Alexander H., *J95-084*
 Forkey, J. N., *J96-069*
 Forliti, D. J., *J96-365*
 Fralick, G. C., *J96-032*
 Frampton, Kenneth D., *J96-419*
 Freund, Jonathan B., *J96-143*
 Fric, Thomas F., *J96-129*
 Fuchs, Maurice Bernard, *J96-233*
 Fujii, Kozo, *J96-300, J96-325*
 Fung, K.-Y., *J96-319*
 Furlong, E. R., *J96-076*
 Gai, S. L., *J96-179, J96-362*
 Gaitonde, Datta, *J96-128*
 Gallis, Michael A., *J96-216*
 Ganguli, Ranjan, *J96-126*
 Gaonkar, G. H., *J96-002*
 Garcia, Ephraim, *J96-353*
 Garg, Sanjay, *J96-185*
 Garrison, T. J., *J96-006, J96-007*
 Gartenberg, Ehud, *J96-385*
 Gatski, Thomas B., *J96-421*
 Geissler, Wolfgang, *J96-153*
 Gerlinger, P., *J96-009*
 Gerolymos, G. A., *J96-209, J96-210*
 Gessman, Richard J., *J96-271*
 Ghattas, Omar N., *J96-037*
 Gilmore, John O., *J96-079*
 Glandier, C., *J96-277*
 Gong, S. W., *J96-250*
 Gordon, S. J., *J96-191*
 Grant, I., *J96-187*
 Griesel, C. J. W., *J96-237*
 Grinstead, J. H., *J96-072, J96-096*
 Groenwold, A. A., *J96-331*
 Gruber, M. R., *J96-342*
 Gu, Haozhong, *J96-200*
 Guo, Yan, *J96-107*
 Gupta, Vijay, *J96-130*
 Gürdal, Zafer, *J96-298*
 Gursul, Ismet, *J96-172*
 Gurumoorthy, Ram, *J96-062*
 Hackett, J. E., *J96-411*
 Haftka, R. T., *J96-234*
 Hage, W., *J96-166*
 Hager, G. D., *J96-247*
 Hajela, P., *J96-380*
 Hakim, Saki, *J96-233*
 Hall, Kenneth C., *J96-240*
 Han, Kyung Seop, *J96-296*
 Han, Wan-zhi, *J96-135*
 Hansen, C. Frederick, *J96-286*
 Hanson, R. K., *J96-073, J96-076*
 Harloff, Gary J., *J96-119*
 Harris, Scott R., *J96-070*
 Harvey, John K., *J96-216*
 Hassenpflug, Walter C., *J96-269*
 Haven, B. A., *J96-388*
 Hayder, M. Ehtesham, *J96-114*
 Heinrich, D. C., *J96-031*
 Heiser, W. H., *J96-168*
 Helms, C., *J96-247*
 Henry, D., *J96-077*
 Hepler, G. R., *J96-199*
 Hersch, Leslie, *J96-070*
 Hesselink, Lambertus, *J96-118*
 Heyliger, Paul, *J96-371*
 Hicks, Y. R., *J96-095*
 Higuchi, H., *J96-180*
 Hingst, W. R., *J96-312*
 Ho, Chih-Ming, *J96-172*
 Ho, I. C. K., *J96-105*
 Hodges, Dewey H., *J96-295*
 Holnicki-Szulc, Jan, *J96-134*
 Hon, John, *J96-247*
 Hong, C. S., *J96-231*
 Hong, John S., *J96-396*
 Hookham, Philip A., *J96-218*
 Hopkins, Dale A., *J96-020, J96-294*
 Horner, M. B., *J96-187*
 Horstman, C. C., *J96-006, J96-007*
 Horton, Harry P., *J93-145*
 Houwing, A. F. P., *J96-073*
 Hsiao, Fei-Bin, *J96-082*
 Hsu, Kwen, *J96-117*
 Hu, Hai-chang, *J96-137*
 Huang, B. Z., *J96-293*
 Huang, J. C., *J96-324*
 Huang, Jen-Kuang, *J96-054, J96-133*
 Huang, Ming-Kc, *J96-186*
 Huang, P. G., *J93-252*
 Huang, Rong F., *J96-082*
 Hubner, J. P., *J96-307*
 Hudson, S. T., *J96-289*
 Huntington, D. E., *J96-333*
 Huser, Asmund, *J96-402*
 Huseyin, K., *J96-199*
 Hutton, Stanley G., *J96-257*
 Huyan, Xiaozhi, *J96-379*
 Huyer, Stephen A., *J96-220*
 Hwang, C. J., *J96-131*
 Hwang, Woonbong, *J96-296*
 Hyde, T. Tupper, *J96-018*
 Hyun, Jae Min, *J96-224*
 Iaccarino, G., *J96-202*
 Inger, George R., *J95-332*
 Iollo, Angelo, *J96-281*
 Irshchik, Hans, *J96-378*
 Isom, Morris P., *J96-424*
 Issa, R. I., *J95-119*
 Issman, E., *J96-318*
 Iwata, Jiro, *J96-272*
 Jacobs, P. A., *J96-203*
 James, C. A., *J96-226*
 Janssens, F. L., *J96-375*
 Janus, J. Mark, *J96-026*
 Jayasimha, D. N., *J96-114*
 Jeffries, R. W., *J96-391*
 Jeng, S. Y., *J96-088*
 Jeng, Yih Nien, *J96-204*
 Jenq, S. T., *J96-058*
 Jensen, H., *J96-336*
 Ji, Shanlong, *J96-321*
 Johnston, Leslie J., *J96-177*
 Jones, James D., *J96-121, J96-160*
 Jones, K. D., *J96-159*
 Jones, Michael G., *J96-084*
 Josefson, B. L., *J96-196*
 Joshi, Shiv P., *J96-329, J96-348*
 Joslin, Ronald D., *J96-384*
 Kahl, K., *J96-416*
 Kailasanath, K., *J96-142, J96-183, J96-382*
 Kaji, Shojiro, *J96-314*
 Kajiwar, I., *J96-022*
 Kaljević, Igor, *J96-020*
 Kalkhoran, Iraj M., *J96-288, J96-424*
 Kallinderis, Y., *J96-047, J96-110*
 Kam, T. Y., *J96-262*
 Kanda, Takeshi, *J96-044*
 Kang, Young Kyu, *J96-296*
 Kannenberg, Keith C., *J96-011*
 Kapania, Rakesh K., *J96-229*
 Karashima, Keichi, *J96-300*
 Karpel, Mordechai, *J96-093*
 Karpouzian, G., *J96-120*
 Katayama, Kazuo, *J95-080*

- Katz, Joseph, J96-038, J96-223
 Kennedy, D., J96-394, J96-413
 Kessler, William J., J96-075
 Keyes, D. E., J96-150
 Khawaja, Aly, J96-047
 Kiedaisch, John W., J96-155
 Kim, C. G., J96-231
 Kim, J. S., J96-287
 Kim, Jae Wook, J96-140
 Kim, Jeong-Tae, J96-254
 Kim, Ji-Heon, J96-056
 Kim, Jin Hee, J96-136
 Kim, Kwan Yeop, J96-224
 Kim, Seung Jo, J96-100, J96-136
 Kimmel, Roger L., J96-398
 King, C. J., J96-242
 King, P. I., J96-267
 Kinoi, Shigeru, J95-080
 Kinzie, Kevin W., J96-241
 Kiss, Tibor, J96-014
 Kissil, Andy, J96-124
 Kistler, A. L., J96-165
 Kitipornchai, S., J96-392
 Kleinstreuer, C., J91-006
 Kleiser, Leonhard, J96-107
 Klug, J., J96-024, J96-057
 Klute, Sandra M., J96-104
 Knight, Charles E., J96-235
 Knight, D. D., J96-006
 Knight, Doyle, J96-208
 Knoll, D. A., J96-150
 Ko, N. W. M., J96-105
 Kobayashi, M. H., J96-045
 Kodiyalam, Srinivas, J96-062, J96-094
 Koga, T., J96-207
 Koide, S., J96-237, J96-306, J96-345
 Koita, Takahiro, J96-228
 Kolbe, Ronald, J96-142
 Komerath, N. M., J96-307
 Kompenhans, Jürgen, J96-153
 Kopriva, David A., J96-086
 Kosmatka, John B., J96-260
 Kounadis, Anthony N., J96-381
 Kral, Linda D., J96-363
 Krauss, R. H., J96-072
 Krogmann, Paul, J96-102
 Kröplin, B., J96-192
 Krothapalli, A., J96-112, J96-242, J96-266, J96-365
 Kruger, Charles H., J96-271
 Küffer, Jürg, J96-401
 Kumar, Anand, J96-320
 Kumar, R. Ramesh, J96-283
 Kurian, Job, J96-283
 Kurosaka, M., J96-388
 Kuruvila, Geojoe, J96-281
 Lachowicz, Jason T., J96-400
 Ladd, John A., J96-363
 Lai, F. M., J96-262
 Lai, Yong G., J96-270
 Lai, Zhihong, J96-133
 Laitone, E. V., J96-299
 Lallment, Gérard, J96-059
 Landsberg, Alexandra, J96-142
 Latham, Ralph L., J96-341
 Laufer, G., J96-072, J96-096
 Laux, Christophe O., J96-271
 Lawrence, Kent L., J96-329
 Lee, Dong-Min, J96-101
 Lee, Duck Joo, J96-140
 Lee, Ho-Jun, J96-193
 Lee, In, J96-101
 Lee, Kwon-Hee, J96-163
 Lee, Sung W., J96-255
 Lee, Wan-Ik, J96-163
 Lele, Sanjiva K., J96-143, J96-357
 Lepert, W. R., J96-069, J96-070
 Leon, Johnathan, J96-390
 Lesieutre, G. A., J96-206
 Leung, R. C. K., J96-105
 Leviant, Alexander S., J96-317
 Levine-West, Marie, J96-124
 Levy, Cesar, J96-418
 Levy, Yuval, J96-118
 Lewellen, D. C., J96-369
 Lewellen, W. S., J96-369
 Lewis, Mark J., J96-407
 Li, H., J96-065
 Li, X. D., J96-174
 Liang, S.-M., J96-028
 Liang, X. Q., J96-016
 Liao, S. C., J96-262
 Libai, A., J96-256
 Librescu, L., J96-023, J96-120
 Liebst, Brad S., J96-060
 Liew, K. M., J96-161, J96-392
 Lim, C. W., J96-161, J96-392
 Lim, M. K., J96-171, J96-310
 Lim, Tae W., J96-373
 Lin, C. A., J96-420
 Lin, C. H., J96-420
 Lin, Chien-Chang, J96-338
 Lin, Hank, J96-172
 Lin, J. C. Muti, J96-243
 Lin, R. M., J96-171, J96-310
 Lin, Sheam-Chyun, J96-268
 Lin, Song W., J96-082
 Lin, W., J96-023
 Liou, Yuan-Chang, J96-204
 Liu, D., J96-395
 Liu, Feng, J96-321
 Liu, Xiaojian, J96-334
 Liu, Zhong-sheng, J96-137
 Livshits, Arkady A., J96-317
 Locke, R. J., J96-095
 Löhner, R., J96-169
 Long, Lyle N., J96-141
 López-Almansa, Francisco, J96-134
 Lorence, Christopher B., J96-240
 Loth, E., J96-048, J96-087, J96-169, J96-315
 Louvet, Y., J96-077
 Lovejoy, Andrew E., J96-229
 Lu, C. M., J96-239
 Lukas, Erik W., J96-081
 Lumley, John L., J96-145
 Luo, Shijun, J96-170, J96-409
 Lutfy, F. M., J96-074
 Lyrantzis, A. S., J96-063, J96-361
 Lyrantzis, C. S., J96-333
 Ma, Chien-Ching, J96-393
 Maciejewski, P. K., J96-226
 Macrossan, M. N., J96-322
 Maeda, T., J96-207
 Maestrello, L., J96-043, J96-175
 Maglaras, G., J96-234
 Mahalingam, Shankar, J96-012, J96-040
 Maixner, Michael Rex, J96-188
 Malbéqui, P., J96-277
 Malik, Moynuddin, J96-092
 Malla, Ramesh B., J96-230
 Mallinson, S. G., J96-179, J96-362
 Man, Raymond S. O., J96-319
 Mani, Mori, J96-363
 Manjunath, A. R., J96-002
 Mankbadi, R. R., J96-063
 Manson, J. Russell, J96-167
 Marchman, J. F., J96-395
 Marcum, David L., J96-387
 Marks, Patrick C., J96-261
 Martens, Steven, J96-241
 Martinson, Scott D., J96-385
 Masad, J. A., J96-383
 Matalon, M., J96-219
 Mateer, George G., J96-039
 Mathur, Tarun, J96-182
 Matsuike, Jun, J95-080
 Matsuo, Akiko, J96-325
 Maurice, Mark S., J96-190
 Máckiewicz, Andrzej, J96-134
 McCann, Gregory J., J96-050
 McClure, W. B., J96-168
 McD Galbraith, R. A., J96-187
 McDaniel, J. C., J96-071, J96-072, J96-096, J96-248
 McGreevy, J. L., J96-175
 McHugh, P. R., J96-150
 McIntyre, Tim, J96-346
 McLaughlin, Dennis K., J96-241
 McManus, Hugh L., J96-194
 McManus, K. R., J96-073
 McMorris, Harlan, J96-047
 Meadows, Kristine R., J96-041
 Mecitoglu, Zahir, J96-330
 Mee, David J., J96-090
 Mei, Chuh, J96-054, J96-133
 Menter, Florian R., J96-039
 Messac, Achille, J96-021
 Messersmith, N. L., J96-282
 Meyer, H. D., J96-276
 Meyer, Scott A., J96-079
 Mignolet, Marc P., J95-084
 Miki, Mitsunori, J96-228
 Miles, R. B., J96-069, J96-070
 Milholen, William E., II, J96-213
 Miller, M. F., J96-078
 Miller, Scott E., J96-290, J96-291
 Milman, Mark, J96-124
 Minesugi, Kenji, J96-035, J96-055
 Miyaji, Koji, J96-300
 Mo, J. J., J96-058
 Moen, Christopher D., J96-201
 Moetakef, Mohammad A., J96-329
 Mohajerjasi, Soheil, J96-036
 Mohamed, A., J96-077
 Moir, Parviz, J96-143, J96-357
 Monson, Daryl J., J96-039
 Morgan, Richard, J96-346
 Morris, Martin J., J96-081
 Morrison, Joseph H., J96-421
 Moses, Hal L., J96-014
 Motallebi, Fariborz, J93-252
 Mu, Siming, J96-040
 Mudford, N. R., J96-179, J96-362
 Mukhopadhyay, Madhujit, J96-374
 Müller, Bernhard, J96-401
 Muntz, E. P., J96-074
 Murakami, Akira, J96-102
 Muravyov, Alexander, J96-257
 Myose, Roy Y., J96-272
 Nagabhushanam, J., J96-002
 Nagali, V., J96-076
 Nagamatsu, A., J96-022
 Naganarayana, B. P., J96-293
 Nagendra, Somanath, J96-094
 Narayanswami, N., J96-006
 Nasuti, F., J96-222
 Nedungadi, Ashish, J96-407
 Nejad, A. S., J96-342
 Nemeth, M. P., J96-023
 Newfield, M. E., J96-076
 Ni, Alexander L., J96-064
 Nieuwstadt, F. T. M., J96-146
 Nikolaidis, E., J96-234, J96-335
 Nishijima, Noriyo, J96-314
 Nishio, Masatomi, J96-227
 Nobari, M. R. H., J96-115
 Noor, Ahmed K., J96-122
 Northam, G. Burton, J96-068
 Oakley, David R., J96-311
 Oakley, Tom R., J96-048
 Obayashi, Shigeru, J96-139
 Ockunzzi, K. A., J96-095
 Ogata, R., J96-345
 Oh, C. K., J96-214
 Olajalo, I. U., J96-376
 Olsson, Robin, J96-194
 Ono, Fumiei, J96-044
 Onoda, Junjiro, J96-035, J96-055, J96-334
 Onofri, M., J96-222
 Oran, E. S., J96-214
 Orkwis, Paul D., J96-098, J96-178, J96-343, J96-358
 Orlandi, P., J96-113
 Orozco, Carlos E., J96-037
 Oshman, Yaakov, J96-290, J96-291
 Ott, P., J96-210
 Otto, J. W., J96-191
 Özyörük, Yusuf, J96-141
 Pageau, Stephane S., J96-297
 Palazotto, Anthony N., J96-091, J96-414
 Palmer, J. L., J96-073
 Papadopoulos, Michael, J96-353
 Park, Christopher, J96-412
 Park, Gyung-Jin, J96-163
 Park, Hyun Chul, J96-296
 Park, J. S., J96-231
 Parker, T. E., J96-078
 Parpia, Ijaz H., J96-117
 Parrott, Tony L., J96-084
 Parthasarathy, V., J96-110
 Pascali, R., J96-273
 Passerel, D., J96-344
 Patnaik, Surya N., J96-020
 Patrick Grace, Sheryl, J96-355, J96-356
 Patton, Richard D., J96-261
 Paul, A. C., J96-258
 Pauley, Laura L., J96-243
 Pei, K. C., J96-371
 Pellegrino, S., J96-123
 Pender, Gareth, J96-167
 Pereira, J. C. F., J96-045
 Peterson, L. D., J96-195, J96-259
 Petitjeans, Philippe, J96-279
 Petullo, S. P., J96-323
 Pieracci, Andrea, J96-372
 Pierson, Michael O., J96-252
 Pike, Jack, J95-332
 Pionelli, Ugo, J96-176
 Pirzadeh, Shahyar, J96-005
 Pitt, M. J., J91-006
 Platzner, M. F., J96-051, J96-159, J96-221
 Plourde, F., J96-403
 Plummer, D. N., J96-247
 Poelaert, D. H. L., J96-375
 Pollard, A., J96-359
 Ponslet, E., J96-234
 Powell, Kenneth G., J96-147
 Prampolini, Marco, J96-215
 Pritchard, Jocelyn I., J96-232
 Qiu, Zhi-ping, J96-135
 Quadrelli, B. M., J96-377
 Quagliaroli, T. M., J96-072, J96-096
 Rabinovich, Boris I., J96-317
 Radcliffe, Robert A., J96-004
 Radhakrishnan, G., J96-423
 Raffel, Markus, J96-153
 Raizer, Yu. P., J96-245
 Ramakrishnan, C. V., J96-258
 Ramani, Anand, J96-235
 Ramaswamy, Mahadevan, J96-087, J96-315
 Rao, B. Nageswara, J96-423
 Rao, S. S., J96-263, J96-350
 Raouf, Raouf A., J96-414
 Raveh, Daniella, J96-093
 Rawlins, W. T., J96-078
 Ray, M. C., J96-292

- Rediniotis, Othon K., J96-104
 Reeder, Mark F., J96-030
 Regan, B. A., J96-003
 Reggio, M., J96-111
 Reichert, B. A., J96-008
 Réveillon, J., J96-406
 Reynier, C., J96-277
 Richard, J. C., J96-032
 Richards, B. E., J96-085
 Rizetta, Donald P., J96-189
 Roberts, Leonard, J96-396
 Robinson, Michael C., J96-220
 Rockwell, D., J96-305, J96-339, J96-391
 Rogers, Stuart E., J96-038
 Rosenfeld, Moshe, J96-010, J96-284
 Rosenwaks, S., J96-410
 Rosier, B., J96-077
 Rothenflue, J. A., J96-267
 Rubinsztein-Dunlop, Halina, J96-346
 Rudrakumar, S., J96-106
 Ryu, Bong-Jo, J95-080
 Saida, N., J96-345
 Saigal, Sunil, J96-020
 Saito, Toshihito, J96-044
 Sällström, J. H., J96-375
 Salvetti, M. V., J96-113
 Salyer, Terry Ray, J96-389
 Samanta, B., J96-292
 Samimy, Mo, J96-370
 Sankar, Lakshmi N., J96-341
 Saravanos, Dimitris A., J96-193, J96-294, J96-371
 Sarzhikov, S. T., J96-245
 Savill, A. M., J96-359
 Saville, Dudley A., J96-070
 Schetz, J. A., J96-395, J96-014
 Schippers, Harmen, J96-278
 Schulten, Johan B. H. M., J96-042
 Scott, Michael A., J96-385
 Seeley, Charles E., J96-017
 Seidel, Jonathan A., J96-301
 Sengupta, Raja, J96-343
 Sensharma, P., J96-234
 Sentman, L. H., J96-191, J96-246
 Sepulveda, A. E., J96-198, J96-253, J96-336
 Settles, G. S., J96-006, J96-007, J96-185
 Sforza, P. M., J96-273
 Sha, Desong, J96-265
 Shang, J. S., J96-128
 Sharma, Surendra P., J96-079
 Sheen, H. J., J96-088
 Sheikh, Abdul Hamid, J96-374
 Sheludko, H. A., J96-264
 Shen, Ming-Chiou, J96-268
 Sheu, Jiann-Hwa, J96-025
 Sheu, Jyh-Cherng, J96-326
 Shih, Chiang, J96-225
 Shim, V. P. W., J96-250
 Shin, Eui-Sup, J96-100
 Shulepov, O., J96-164
 Shupikov, A. N., J96-264
 Shy, Wen W., J96-082
 Simitses, George J., J96-379
 Simmons, John M., J96-090
 Simms, David, J96-220
 Sinkovits, R. S., J96-214
 Sirkis, J. S., J96-416
 Sivier, S., J96-169
 Skinner, K. A., J96-033
 Smart, Michael K., J96-288
 Smetankina, N. V., J96-264
 Smith, Gregory E., J96-119
 Smith, K. M., J96-181
 Smith, Michael J. C., J96-212
 Smith, Michael W., J96-068
 Smith, Richard J., J96-177
 Snyman, J. A., J96-331
 Sobieraj, G. B., J96-302
 Sobieszczanski-Sobieski, J., J96-001, J96-232
 Sohn, C. H., J96-287
 Song, Da-tong, J96-135
 Sonti, Venkata R., J96-121, J96-160
 Sophianopoulos, Dimitris S., J96-381
 Speziale, Charles G., J95-312, J96-340, J96-421
 Spyropoulos, Evangelos T., J96-154
 Squire, L. C., J96-327
 Stalker, R. J., J96-033, J96-346
 Stam, Mike, J96-249
 Stander, N., J96-331
 Stanewsky, Egon, J96-102
 Starnes, J. H., Jr., J96-023
 Steele, W. G., J96-157, J96-226
 Stewart, J. N., J96-187
 Stollery, J. L., J96-237
 Storm, P. Victor, J96-132
 Strawn, Roger C., J96-361
 Streitlein, Knut, J96-366
 Stremel, Paul M., J96-313
 Stroud, W. Jefferson, J96-335
 Strykowski, P. J., J96-266, J96-365
 Stubbs, Norris, J96-254
 Su, Y. P., J96-280
 Sues, Robert H., J96-311
 Sugimoto, Nobumasa, J96-316
 Sugiyama, Yoshihiko, J95-080
 Sun, C. T., J96-024, J96-057
 Sunar, M., J96-350
 Sundaram, S., J96-106
 Sundareshan, M. K., J96-423
 Sutyurin, Vladislav G., J96-295
 Swaminathan, Nedunchezian, J96-012
 Szumowski, A. P., J96-302
 Ta'asan, Shlomo, J96-281
 Tabiei, Ala, J96-379
 Tai, C. H., J96-280
 Tai, Chang-Hsien, J96-025
 Takahashi, Masahiro, J96-044
 Takashi, Susumu, J96-139
 Tam, Christopher K. W., J96-049, J96-144
 Tam, Chung-Jen, J96-098, J96-358
 Tamma, Kumar K., J96-265
 Tan, Roger C. E., J96-352
 Tan, Zhiqiang, J96-211
 Tang, S. K., J96-105
 Tanner, Sharon E., J96-084
 Tatting, Brian F., J96-298
 Taylor, R. P., J96-157, J96-226
 Telionis, Demetri P., J96-104
 Theodoropoulos, P. T., J96-191, J96-246
 Thies, Andrew T., J96-049
 Thomas, H. L., J96-198
 Thomson, J. Ross, J96-152
 Thurber, M. C., J96-073
 Tillman, T. G., J96-165
 Tognaccini, R., J96-202
 Toh, S. L., J96-250
 Trépanier, J.-Y., J96-111
 Triantafyllou, George S., J96-366
 Triantafyllou, Michael S., J96-366
 Tromp, Jeffrey C., J96-099
 Tryggvason, Grétar, J96-115
 Tsai, C.-J., J96-028
 Tsui, Yeng-Yung, J96-217
 Tsujioka, K., J96-022
 Tsynkov, S. V., J96-109
 Tullis, S., J96-359
 Tuncer, Ismail H., J96-051
 Turkel, E., J96-109
 Tyler, Charles, J96-422
 Tyll, J. S., J96-395
 Tyurin, Yury V., J96-317
 Tzeng, Jerome T., J96-236
 Tzeng, Pei-Yuan, J96-025
 Tzou, H. S., J96-015
 Vallet, L., J96-209, J96-210
 Van Dyken, R. D., J96-221
 van Oudheusden, B. W., J95-119
 Vanden, Kirk J., J96-178
 VanGilder, Douglas B., J96-367
 Varghese, P. L., J96-077, J96-211
 Vasiliev, V. I., J96-148
 Vasiliev, Valery V., J96-298
 Vaziri, Reza, J96-252
 Venkatakrishnan, V., J96-083
 Verma, S. B., J96-130
 Vervisch, L., J96-406
 Verzicco, R., J96-113
 Vest, Michael S., J96-223
 Viñals, Jorge, J96-152
 Viperman, Jeffrey S., J96-328
 Virgin, Lawrence N., J96-347
 Viswanath, P. R., J96-106
 Vizzini, Anthony J., J96-255
 Vorobieff, Peter, J96-339
 Vuillon, J., J96-184
 Wakamatsu, Yoshio, J96-044
 Wake, Brian E., J96-052
 Waldo, R. E., J96-191
 Wallis, Steve G., J96-167
 Wang, C. S., J96-324
 Wang, Da-jun, J96-137
 Wang, F. Y., J96-273
 Wang, James Ting-Shun, J96-338
 Wang, Meng, J96-357
 Wang, X., J96-359
 Washington, D., J96-112, J96-242, J96-266
 Watson, Willie R., J96-084
 Wegener, Margaret, J96-346
 Wehe, S. D., J96-073
 Wei, Fu-Shang, J96-349, J96-351
 Wendt, B. J., J96-008
 Wensing, Jeroen A., J96-278
 Wernert, Philippe, J96-153
 Wesfreid, José-Eduardo, J96-279, J96-304
 Whitehurst, R. B., III, J96-072
 Whiting, Ellis E., J96-079
 Wilder, M. C., J96-013
 Wilkinson, Stephen P., J96-400
 Williams, F. A., J96-287
 Williams, Fred W., J96-394, J96-413
 Williams, Phil W. L., J96-394
 Williamson, H. M., J96-337
 Willis, B. P., J96-312
 Wilson, Dennis, J96-211
 Wilson, M. A., J96-196
 Wissink, Andrew M., J96-361
 Wood, C. W., J96-168
 Wright, Michael J., J96-215
 Wu, L.-N., J96-028
 Wu, Po-Wenn, J96-217
 Wu, X. X., J96-024
 Xu, Kangming, J96-122
 Xu, Xiang-Hua, J96-340
 Yamanaka, K., J96-199
 Yang, Bingen, J96-308, J96-332
 Yang, J. S., J96-016
 Yang, J. Y., J96-324
 Yang, R. J., J96-239
 Ye, R., J96-015
 Yip, Y. C., J96-251
 Yon, Steven, J96-038
 Yoo, J., J96-380
 You, Z., J96-123
 Young, Theodore, J96-142
 Young, Wen-Bin, J96-309
 Zaman, K. B. M. Q., J96-030, J96-031
 Zapfe, J. A., J96-206
 Zeidan, E., J96-097
 Zeitoun, D., J96-184
 Zerva, Aspasia, J96-138, J96-173
 Zha, Ge-Cheng, J96-208
 Zhang, De-Wen, J96-349, J96-351
 Zhang, J., J96-180
 Zhang, L.-M., J96-376
 Zhang, Ouqi, J96-138, J96-173
 Zhang, X. D., J96-111
 Zheng, Z. C., J96-089
 Zhong, Xiaolin, J96-103
 Zhou, Jianping, J96-308
 Zhou, R. C., J96-054
 Zhou, S., J96-174
 Zhuang, W. Z. L., J96-337
 Ziegler, Franz, J96-378

Chronological Index

J91-006 Laminar Flow Past Three Closely Spaced Monodisperse Spheres or Nonevaporating Drops. R. S. Ramachandran, T.-Y. Wang, C. Kleinsteuer, and H. Chiang, *North Carolina State University* (29, 1, p. 43) Article

Technical Comment by M. J. Pitt, *University of Sheffield, England, UK* (34, 6, p. 1305)

Reply (34, 6, p. 1306)

J93-145 Laminar Boundary Layers Subjected to High-Frequency Traveling-Wave Fluctuations. David Greenblatt and Steven B. Damelin, *Aerotek, South Africa* (31, 5, p. 957) Technical Note

Technical Comment by Harry P. Horton, *Queen Mary and Westfield College, University of London, England, UK* (34, 6, p. 1304)

J93-252 Skin Friction and Velocity Profile Family for Compressible Turbulent Boundary Layers. P. G. Huang, *Eloret Institute*; P. Bradshaw, *Stanford University*; and T. J. Coakley, *NASA Ames Research Center* (31, 9, p. 1600) Article

Errata (31, 11, p. 2192)

Technical Comment by Fariborz Motallebi, *Delft University of Technology, The Netherlands* (34, 4, p. 870)

Reply (34, 4, p. 873)

J95-080 Effect of Concentrated Mass on Stability of Cantilevers Under Rocket Thrust. Yoshihiko Sugiyama and Jun Matsuike, *University of Osaka Prefecture, Japan*; Bong-Jo Ryu, *Taejon National University of Technology, Korea*; and Kazuo Katayama, Shigeru Kinoi, and Norio Enomoto, *Dicel Chemical Industries, Ltd., Japan* (33, 3, p. 499) Article based on AIAA Paper 94-1622 CP942

Errata (34, 1, p. 212)

J95-084 Vibration and Buckling of Flexible Rotating Beams. Chris D. Eick, *Allied-Signal Aerospace Company*; and Marc P. Mignolet, *Arizona State University* (33, 3, p. 528) Article

Technical Comment by Alexander H. Flax (34, 3, p. 640)

Reply (34, 3, p. 641)

J95-119 Rise of Total Pressure in Frictional Flow. R. I. Issa, *Imperial College of Science, Technology, and Medicine, England, UK* (33, 4, p. 772) Technical Note

Technical Comment by B. W. van Oudheusden, *Delft University of Technology, The Netherlands* (34, 2, p. 426)

Reply (34, 2, p. 427)

J95-161 Self-Excited Wire Method for the Control of Turbulent Mixing Layers. U. Vandsburger and C. Ding, *Virginia Polytechnic Institute and State University* (33, 6, p. 1032) Article based on AIAA Paper 93-0443

Technical Comment by Peter J. Disimile, *University of Cincinnati* (34, 4, p. 869)

J95-312 Near-Wall Integration of Reynolds Stress Turbulence Closures with No Wall Damping. Charles G. Speziale, *Boston University*; and Ridha Abid, *High Technology Corporation* (33, 10, p. 1974) Technical Note

Errata (34, 1, p. 212)

J95-332 New Similarity Solutions for Hypersonic Boundary Layers with Applications to Inlet Flows. George R. Inger, *Iowa State University* (33, 11, p. 2080) Article based on AIAA Paper 94-2351

Technical Comment by Jack Pike, *England, UK* (34, 7, p. 1536)

Reply (34, 7, p. 1537)

J95-356 Flow Visualization Using Natural Condensation of Water Vapor. Michael Brendel (33, 11, p. 2234) Technical Note

Errata (34, 3, p. 643)

J96-001 Optimization of Coupled Systems: A Critical Overview of Approaches. R. J. Balling, *Brigham Young University*; and J. Sobieszcanski-Sobieski, *NASA Langley Research Center* (34, 1, p. 6) Survey Paper based on AIAA Paper 94-4330 CP9413

J96-002 Flap-Lag-Torsion Stability in Hover and Forward Flight with Three-Dimensional Wake. A. R. Manjunath, *Hindustan Aeronautics Limited, India*; S. J. Chunduru, *Florida Atlantic University*; J. Nagabhushanam, *Indian Institute of Science*; and G. H. Gaonkar, *Florida Atlantic University* (34, 1, p. 18) Article

J96-003 Application of the Finite Element Method to Acoustic Scattering Problems. J. A. Eaton and B. A. Regan, *University College Galway, Ireland* (34, 1, p. 29) Article based on AIAA Paper 93-4339

J96-004 Matching Inviscid/Boundary-Layer Flowfields. Fred R. DeJarnette and Robert A. Radcliffe, *North Carolina State University* (34, 1, p. 35) Article based on AIAA Paper 94-0128

J96-005 Three-Dimensional Unstructured Viscous Grids by the Advancing-Layers Method. Shahyar Pirzadeh, *ViGYAN, Inc.* (34, 1, p. 43) Article

J96-006 Flowfield Surveys and Computations of a Crossing-Shock Wave/Boundary-Layer Interaction. T. J. Garrison, *Louisiana State University*; G. S. Settles, *Pennsylvania State University*; N. Narayanswami and D. D. Knight, *Rutgers University*; and C. C. Horstman, *NASA Ames Research Center* (34, 1, p. 50) Article based on AIAA Paper 94-2273

J96-007 Measurements of the Triple Shock Wave/Turbulent Boundary-Layer Interaction. T. J. Garrison, *Louisiana State University*; G. S. Settles, *Pennsylvania State University*; and C. C. Horstman, *NASA Ames Research Center* (34, 1, p. 57) Article based on AIAA Paper 94-2274

J96-008 Improving Curved Subsonic Diffuser Performance with Vortex Generators. B. A. Reichert, *Kansas State University*; and B. J. Wendt, *Modern Technologies Corporation* (34, 1, p. 65) Article

J96-009 Numerical Simulation of Mixing for Turbulent Slot Injection. P. Gerlinger, J. Algermissen, and D. Brüggemann, *University of Stuttgart, Germany* (34, 1, p. 73) Article based on AIAA Paper 94-2247

J96-010 Calculation of Streaklines for Time Periodic Flows. Moshe Rosenfeld, *Tel-Aviv University, Israel* (34, 1, p. 79) Article

J96-011 Monte Carlo Computation of Rarefied Supersonic Flow into a Pitot Probe. Keith C. Kannenberg and Iain D. Boyd, *Cornell University* (34, 1, p. 83) Article

J96-012 Effects of Shear and Strain on Temporal Evolution of Laminar Diffusion Flames. Nedunchezian Swaminathan and Shankar Mahalingam, *University of Colorado* (34, 1, p. 89) Article

J96-013 Boundary-Layer-Tripping Studies of Compressible Dynamic Stall Flow. M. S. Chandrasekhara, *U.S. Naval Postgraduate School*; M. C. Wilder, *MCAT Institute*; and L. W. Carr, *U.S. Army Aeroflightdynamics Directorate* (34, 1, p. 96) Article based on AIAA Paper 94-2340

J96-014 Experimental and Numerical Study of Transonic Turbine Cascade Flow. Tibor Kiss, Joseph A. Schetz, and Hal L. Moses, *Virginia Polytechnic Institute and State University* (34, 1, p. 104) Article based on AIAA Paper 93-3064

J96-015 Analysis of Piezoelectric Structures with Laminated Piezoelectric Triangle Shell Elements. H. S. Tzou and R. Ye, *University of Kentucky* (34, 1, p. 110) Article

- J96-016 Shape Control of Vibrating Simply Supported Rectangular Plates.** R. C. Batra and X. Q. Liang, *Virginia Polytechnic Institute and State University*; and J. S. Yang, *Rensselaer Polytechnic Institute* (34, 1, p. 116) Article
- J96-017 Development of a Polymeric Piezoelectric C-Block Actuator Using Hybrid Optimization Technique.** Charles E. Seeley and Aditi Chattopadhyay, *Arizona State University*; and Diann Brei, *University of Michigan* (34, 1, p. 123) Article based on AIAA Paper 95-1109 CP952
- J96-018 Actuator with Built-In Viscous Damping for Isolation and Structural Control.** T. Tupper Hyde, *Massachusetts Institute of Technology*; and Eric H. Anderson, *CSA Engineering, Inc.* (34, 1, p. 129) Article
- J96-019 Identification of Impact Force and Location Using Distributed Sensors.** Keeyoung Choi and Fu-Kuo Chang, *Stanford University* (34, 1, p. 136) Article
- J96-020 Completed Beltrami-Michell Formulation for Analyzing Mixed Boundary Value Problems in Elasticity.** Surya N. Patnaik and Igor Kaljević, *Ohio Aerospace Institute*; Dale A. Hopkins, *NASA Lewis Research Center*; and Sunil Saigal, *Carnegie Mellon University* (34, 1, p. 143) Article
- J96-021 Physical Programming: Effective Optimization for Computational Design.** Achilles Messac, *Northeastern University* (34, 1, p. 149) Article
- J96-022 Integrated Optimum Design of Structure and H^∞ Control System.** K. Tsujioka, I. Kajiwar, and A. Nagamatsu, *Tokyo Institute of Technology, Japan* (34, 1, p. 159) Article based on AIAA Paper 95-1483 CP952
- J96-023 Frequency-Load Interaction of Geometrically Imperfect Curved Panels Subjected to Heating.** L. Librescu and W. Lin, *Virginia Polytechnic Institute and State University*; and M. P. Nemeth and J. H. Starnes Jr., *NASA Langley Research Center* (34, 1, p. 166) Article based on AIAA Paper 94-1342 CP942
- J96-024 Efficient Modeling of Postbuckling Delamination Growth in Composite Laminates Using Plate Elements.** J. Klug, X. X. Wu, and C. T. Sun, *Purdue University* (34, 1, p. 178) Article
- J96-025 Improvement of Explicit Multistage Schemes for Central Spatial Discretization.** Chang-Hsien Tai, Jiann-Hwa Sheu, and Pei-Yuan Tzeng, *Chung Cheng Institute of Technology, Taiwan, ROC* (34, 1, p. 185) Technical Note
- J96-026 Use of a Wake-Integral Method for Computational Drag Analysis.** J. Mark Janus and Animesh Chatterjee, *Mississippi State University/National Science Foundation Engineering Research Center for Computational Field Simulation* (34, 1, p. 188) Technical Note based on AIAA Paper 95-0535
- J96-027 New Mixed Van Leer Flux Splitting for Transonic Viscous Flow.** Pascal Ferrand and Stéphane Aubert, *École Centrale de Lyon, France* (34, 1, p. 190) Technical Note
- J96-028 Efficient, Robust Second-Order Total Variation Diminishing Scheme.** S.-M. Liang, C.-J. Tsai, and L.-N. Wu, *National Cheng Kung University, Taiwan, ROC* (34, 1, p. 193) Technical Note
- J96-029 Reduction of Fluctuating Pressure Loads in Shock/Boundary-Layer Interactions Using Vortex Generators: Part 2.** J. W. Barter and D. S. Dolling, *University of Texas at Austin* (34, 1, p. 195) Technical Note
- J96-030 Impact of Tab Location Relative to the Nozzle Exit on Jet Distortion.** Mark F. Reeder and K. B. M. Q. Zaman, *NASA Lewis Research Center* (34, 1, p. 197) Technical Note based on AIAA Paper 94-3385
- J96-031 Flow Oscillation over an Airfoil Near Stall.** M. B. Bragg, D. C. Heinrich, and F. A. Balow, *University of Illinois at Urbana-Champaign*; and K. B. M. Q. Zaman, *NASA Lewis Research Center* (34, 1, p. 199) Technical Note
- J96-032 Use of Drag Probe in Supersonic Flow.** J. C. Richard and G. C. Fralick, *NASA Lewis Research Center* (34, 1, p. 201) Technical Note
- J96-033 Mass Spectrometer Measurements of Test Gas Composition in a Shock Tunnel.** K. A. Skinner and R. J. Stalker, *University of Queensland, Australia* (34, 1, p. 203) Technical Note
- J96-034 Calibration of Preston Tubes.** Dietrich W. Bechert, *DLR, German Aerospace Research Establishment* (34, 1, p. 205) Technical Note
- J96-035 Alternative Control Logic for Type-II Variable-Stiffness System.** Junjiro Onoda and Kenji Minesugi, *Institute of Space and Astronautical Science, Japan* (34, 1, p. 207) Technical Note
- J96-036 Structure and Properties of Three-Dimensional Braided Composites Including Axial Yarns.** Soheil Mohajer-jasbi, *Boeing Defense and Space Group* (34, 1, p. 209) Technical Note
- J96-037 Infeasible Path Optimal Design Methods with Applications to Aerodynamic Shape Optimization.** Carlos E. Orozco, *University of Virginia*; and Omar N. Ghattas, *Carnegie Mellon University* (34, 2, p. 217) Article based on AIAA Paper 92-4836 CP9213
- J96-038 Impulsive Start of a Symmetric Airfoil at High Angle of Attack.** Joseph Katz and Steven Yon, *San Diego State University*; and Stuart E. Rogers, *NASA Ames Research Center* (34, 2, p. 225) Article based on AIAA Paper 95-1872 CP955
- J96-039 Skin-Friction Measurements and Calculations on a Lifting Airfoil.** George G. Mateer and Daryl J. Monson, *NASA Ames Research Center*; and Florian R. Menter, *Eloret Institute* (34, 2, p. 231) Article based on AIAA Paper 95-2192 CP956
- J96-040 Direct Numerical Simulation of Acoustic/Shear Flow Interactions in Two-Dimensional Ducts.** Siming Mu and Shankar Mahalingam, *University of Colorado* (34, 2, p. 237) Article
- J96-041 Using High-Order Accurate Essentially Nonoscillatory Schemes for Aeroacoustic Applications.** Jay Casper, *VI-GYAN, Inc.*; and Kristine R. Meadows, *NASA Langley Research Center* (34, 2, p. 244) Article based on AIAA Paper 95-0163
- J96-042 Effects of Asymmetric Inflow on Near-Field Propeller Noise.** Johan B. H. M. Schulten, *National Aerospace Laboratory, The Netherlands* (34, 2, p. 251) Article
- J96-043 Control of Panel Response to Turbulent Boundary-Layer and Acoustic Excitations.** Lucio Maestrello, *NASA Langley Research Center* (34, 2, p. 259) Article
- J96-044 Experimental Studies of Supersonic Film Cooling with Shock Wave Interaction.** Takeshi Kanda, Fumie Ono, and Masahiro Takahashi, Toshihito Saito, and Yoshio Wakamatsu, *National Aerospace Laboratory, Japan* (34, 2, p. 265) Article based on AIAA Paper 95-3141
- J96-045 Characteristic-Based Pressure Correction at All Speeds.** M. H. Kobayashi and J. C. F. Pereira, *Instituto Superior Técnico, Portugal* (34, 2, p. 272) Article
- J96-046 Three-Dimensional Unstructured Adaptive Multigrid Scheme for the Navier-Stokes Equations.** Mark E. Braaten and Stuart D. Connell, *General Electric Corporate R&D Center* (34, 2, p. 281) Article
- J96-047 Hybrid Prismatic/Tetrahedral Grid Generation for Viscous Flows Around Complex Geometries.** Yannis Kallin-

deris, Aly Khawaja, and Harlan McMorris, *University of Texas at Austin* (34, 2, p. 291) Article

J96-048 Cinematic Particle Image Velocimetry of High-Reynolds-Number Turbulent Free Shear Layer. Tom R. Oakley, Eric Loth, and Ronald J. Adrian, *University of Illinois at Urbana-Champaign* (34, 2, p. 299) Article based on AIAA Paper 94-2298

J96-049 Computation of Turbulent Axisymmetric and Nonaxisymmetric Jet Flows Using the $K-\epsilon$ Model. Andrew T. Thies and Christopher K. W. Tam, *Florida State University* (34, 2, p. 309) Article

J96-050 Experimental Investigation of Supersonic Gaseous Injection into a Supersonic Freestream. Gregory J. McCann and Rodney D. W. Bowersox, *U.S. Air Force Institute of Technology* (34, 2, p. 317) Article

J96-051 Thrust Generation due to Airfoil Flapping. Ismail H. Tuncer and Max F. Platzer, *U.S. Naval Postgraduate School* (34, 2, p. 324) Article

J96-052 Investigation of High-Order Upwinded Differencing for Vortex Convection. Brian E. Wake and Dochul Choi, *United Technologies Research Center* (34, 2, p. 332) Article based on AIAA Paper 95-1719 CP956

J96-053 Chemical Laser Modeling with Genetic Algorithms. David L. Carroll, *University of Illinois at Urbana-Champaign* (34, 2, p. 338) Article

J96-054 Suppression of Nonlinear Panel Flutter at Supersonic Speeds and Elevated Temperatures. R. C. Zhou, Chuh Mei, and Jen-Kuang Huang, *Old Dominion University* (34, 2, p. 347) Article based on AIAA Paper 94-1743 CP944

J96-055 Semiactive Vibration Suppression by Variable-Damping Members. Junjiro Onoda and Kenji Minesugi, *Institute for Space and Astronautical Science, Japan* (34, 2, p. 355) Article based on AIAA Paper 94-1770 CP944

J96-056 Postprocess Method Using Displacement Field of Higher Order Laminated Composite Plate Theory. Maenghyo Cho and Ji-Heon Kim, *Inha University, Korea* (34, 2, p. 362) Article based on AIAA Paper 95-1209 CP952

J96-057 Analysis of Cracked Aluminum Plates Repaired with Bonded Composite Patches. C. T. Sun, J. Klug, and C. Arendt, *Purdue University* (34, 2, p. 369) Article based on AIAA Paper 95-1505 CP942

J96-058 Ballistic Impact Response for Two-Step Braided Three-Dimensional Textile Composites. S. T. Jenq and J. J. Mo, *National Cheng Kung University, Taiwan, ROC* (34, 2, p. 375) Article

J96-059 Iterative Least-Squares Calculation for Modal Eigenvector Sensitivity. Jean-Guy Béliveau, *University of Vermont*; and Scott Cogan, Gérard Lallemand, and Frederique Ayer, *Université de Franche-Comté, France* (34, 2, p. 385) Article

J96-060 Finite Element Model Tuning Using Automated Structural Optimization System Software. Richard G. Cobb, Robert A. Canfield, and Brad S. Liebst, *U.S. Air Force Institute of Technology* (34, 2, p. 392) Article

J96-061 Modeling Nonaxisymmetric Off-Design Shapes of Large Scientific Balloons. Frank Baginski, *George Washington University* (34, 2, p. 400) Article

J96-062 Neural Networks with Modified Backpropagation Learning Applied to Structural Optimization. Srinivas Kodiyalam, *General Electric Corporate Research and Development Center*; and Ram Gurumoorthy, *General Electric Corporate Research*

and Development Center (34, 2, p. 408) Article based on AIAA Paper 95-1370 CP952

J96-063 Prediction of the Far-Field Jet Noise Using Kirchhoff's Formulation. A. S. Lyrintzis, *Purdue University*; and R. R. Manbadi, *NASA Lewis Research Center* (34, 2, p. 413) Technical Note based on AIAA Paper 95-0508

J96-064 Boundary Conditions for the Vorticity-Velocity Formulation of Navier-Stokes Equations. Alexander L. Ni, *Asea Brown Boveri, Ltd., Switzerland* (34, 2, p. 416) Technical Note

J96-065 Oblique-Shock/Expansion-Fan Interaction—Analytical Solution. H. Li and G. Ben-Dor, *Ben-Gurion University of the Negev, Israel* (34, 2, p. 418) Technical Note

J96-066 Automation of Some Operations of a Wind Tunnel Using Artificial Neural Networks. Arthur J. Decker and Alvin E. Buggele, *NASA Lewis Research Center* (34, 2, p. 421) Technical Note

J96-067 Shape Optimization with Buckling and Stress Constraints. M. E. Botkin, *General Motors Research and Development Center* (34, 2, p. 423) Technical Note based on AIAA Paper 94-4291 CP9413

J96-068 Application of Absorption Filter Planar Doppler Velocimetry to Sonic and Supersonic Jets. Michael W. Smith, G. Burton Northam, and J. Philip Drummond, *NASA Langley Research Center* (34, 3, p. 434) Article based on AIAA Paper 95-0299

J96-069 Demonstration and Characterization of Filtered Rayleigh Scattering for Planar Velocity Measurements. J. N. Forkey, N. D. Finkelstein, W. R. Lempert, and R. B. Miles, *Princeton University* (34, 3, p. 442) Article based on AIAA Paper 95-0298

J96-070 Quantitative Measurements of Internal Circulation in Droplets Using Flow Tagging Velocimetry. Scott R. Harris, Walter R. Lempert, Leslie Hersh, C. L. Burcham, Dudley A. Saville, and Richard B. Miles, *Princeton University*; and Kyle Gee and Richard P. Haughland, *Molecular Probes, Inc.* (34, 3, p. 449) Article based on AIAA Paper 95-0168

J96-071 Complete Three-Dimensional Multiparameter Mapping of a Supersonic Ramp Fuel Injector Flowfield. James M. Donohue and James C. McDaniel Jr., *University of Virginia* (34, 3, p. 455) Article based on AIAA Paper 95-0519

J96-072 Planar OH Density and Apparent Temperature Measurements in a Supersonic Combusting Flow. G. Laufer, T. M. Quagliaroli, R. H. Krauss, R. B. Whitehurst III, and J. C. McDaniel, *University of Virginia*; and J. Grinstead, *Princeton University* (34, 3, p. 463) Article based on AIAA Paper 95-0512

J96-073 Comparison of Planar Fluorescence Measurements and Computational Modeling of a Shock-Layer Flow. A. F. P. Houwing, *Australian National University*; J. L. Palmer, M. C. Thurber, S. D. Wehe, and R. K. Hanson, *Stanford University*; and R. R. Boyce, *University of Queensland, Australia* (34, 3, p. 470) Article based on AIAA Paper 95-0515

J96-074 Initial Experimental Study of Pulsed Electron Beam Fluorescence. F. M. Lutfy and E. P. Muntz, *University of Southern California, Los Angeles* (34, 3, p. 478) Article

J96-075 Simultaneous Water Vapor Concentration and Temperature Measurements Using 1.31 μm Diode Lasers. Mark G. Allen and William J. Kessler, *Physical Sciences, Inc.* (34, 3, p. 483) Article

J96-076 Scanned- and Fixed-Wavelength Absorption Diagnostics for Combustion Measurements Using Multiplexed Diode Lasers. D. S. Baer, V. Nagali, E. R. Furlong, and R. K. Hanson, *Stanford University*; and M. E. Newfield, *NASA Ames*

Research Center (34, 3, p. 489) Article based on AIAA Paper 95-0426

J96-077 Tunable Diode Laser Measurements on Nitric Oxide in a Hypersonic Wind Tunnel. A. Mohamed, B. Rosier, D. Henry, and Y. Louvet, *ONERA, France*; and P. L. Varghese, *University of Texas at Austin* (34, 3, p. 494) Article based on AIAA Paper 95-0428

J96-078 Infrared Emission from High Temperature $H_2O(v_2)$: A Diagnostic for Concentration and Temperature. T. E. Parker, *Colorado School of Mines*; and M. F. Miller, K. R. McManus, M. G. Allen, and W. T. Rawlins, *Physical Sciences, Inc.* (34, 3, p. 500) Article based on AIAA Paper 95-0484

J96-079 Atomic Oxygen Line Shape Measurement at 130 nm with Raman-Shifted Laser. Scott A. Meyer, *Stanford University*; Surendra P. Sharma, *NASA Ames Research Center*; Daniel Bershader, *Stanford University*; Ellis E. Whiting, *Thermophysics Institute*; Richard J. Exberger, *NASA Ames Research Center*; and John O. Gilmore, *Stanford University* (34, 3, p. 508) Article based on AIAA Paper 95-0290

J96-080 Long-Range Schmidt-Cassegrain Laser Velocimeter for Large Wind-Tunnel Applications. Stephen E. Dunagan, *NASA Ames Research Center* (34, 3, p. 515) Article based on AIAA Paper 95-0019

J96-081 Step Response of Pressure-Sensitive Paints. Bruce F. Carroll, John D. Abbit, and Erik W. Lukas, *University of Florida*; and Martin J. Morris, *McDonnell Douglas Aerospace* (34, 3, p. 521) Article based on AIAA Paper 95-0483

J96-082 Influence of Surface Flow on Aerodynamic Loads of a Cantilever Wing. Rong F. Huang, Wen W. Shy, and Song W. Lin, *National Taiwan Institute of Technology, ROC*; and Fei-Bin Hsiao, *National Cheng Kung University, Taiwan, ROC* (34, 3, p. 527) Article

J96-083 Perspective on Unstructured Grid Flow Solvers. V. Venkatakrishnan, *Institute for Computer Applications in Science and Engineering, NASA Langley Research Center* (34, 3, p. 533) Article based on AIAA Paper 95-0667

J96-084 Validation of a Numerical Method for Extracting Liner Impedance. Willie R. Watson, *NASA Langley Research Center*; Michael G. Jones, *Lockheed Engineering and Sciences Company, Inc.*; and Sharon E. Tanner and Tony L. Parrott, *NASA Langley Research Center* (34, 3, p. 548) Article

J96-085 Implicit Time-Stepping Methods for the Navier-Stokes Equations. K. J. Badcock and B. E. Richards, *University of Glasgow, Scotland, UK* (34, 3, p. 550) Article based on AIAA Paper 95-1711 CP956

J96-086 Spectral Solution of the Viscous Blunt-Body Problem 2: Multidomain Approximation. David A. Kopriva, *Florida State University* (34, 3, p. 560) Article

J96-087 Free Shear Layer Interaction with an Expansion-Compression Wave Pair. Mahadevan Ramaswamy, Eric Loth, and J. Craig Dutton, *University of Illinois at Urbana-Champaign* (34, 3, p. 565) Article

J96-088 Recirculation Zones of Unconfined and Confined Annular Swirling Jets. H. J. Sheen, W. J. Chen, and S. Y. Jeng, *National Taiwan University, ROC* (34, 3, p. 572) Article

J96-089 Study of Aircraft Wake Vortex Behavior Near the Ground. Z. C. Zheng and Robert L. Ash, *Old Dominion University* (34, 3, p. 580) Article

J96-090 Three-Component Force Balance for Flows of Millisecond Duration. David J. Mee, William J. T. Daniel, and John M.

Simmons, *University of Queensland, Australia* (34, 3, p. 590) Article

J96-091 Viscoelastic Material Response with a Fractional-Derivative Constitutive Model. William P. Baker, Lloyd B. Eldred, and Anthony N. Palazotto, *U. S. Air Force Institute of Technology* (34, 3, p. 596) Article

J96-092 Semianalytical Differential Quadrature Solution for Free Vibration Analysis of Rectangular Plates. Charles W. Bert and Moinuddin Malik, *University of Oklahoma* (34, 3, p. 601) Article based on AIAA Paper 95-1171 CP952

J96-093 Fictitious Mass Element in Structural Dynamics. Mordechai Karpel and Daniella Raveh, *Technion-Israel Institute of Technology* (34, 3, p. 607) Article based on AIAA Paper 95-1343 CP952

J96-094 Composite Sandwich Structure Optimization with Application to Satellite Components. Srinivas Kodiyalam and Somanath Nagendra, *General Electric Corporate R&D Center*; and Joel DeStefano, *Lockheed Martin Astro Space* (34, 3, p. 614) Article

J96-095 OH Imaging in a Lean Burning High-Pressure Combustor. R. J. Locke, *NYMA, Inc.*; Y. R. Hicks and R. C. Anderson, *NASA Lewis Research Center*; and K. A. Ockunzji, *Case Western Reserve University* (34, 3, p. 622) Technical Note based on AIAA Paper 95-0173

J96-096 Single-Pulse Temperature Measurements in Turbulent Flame Using Laser-Induced O_2 Fluorescence. J. H. Grinstead, *Princeton University*; and T. M. Quagliaroli, G. Laufer, and J. C. McDaniel Jr., *University of Virginia* (34, 3, p. 624) Technical Note based on AIAA Paper 95-0423

J96-097 Multiple-Time-Scale Turbulence Model Computations of Flow over a Square Rib. E. Zeidan and N. Djilali, *University of Victoria, Canada* (34, 3, p. 626) Technical Note

J96-098 Comparison of Baldwin-Lomax Turbulence Models for Two-Dimensional Open Cavity Computations. Chung-Jen Tam, Paul D. Orkwis, and Peter J. Disimile, *University of Cincinnati* (34, 3, p. 629) Technical Note based on AIAA Paper 95-0361

J96-099 Temporal Evolution of Three-Dimensional Vortex Breakdown from Steady, Axisymmetric Solutions. Jeffrey C. Tromp and Phillip S. Beran, *U.S. Air Force Institute of Technology* (34, 3, p. 632) Technical Note based on AIAA Paper 95-2310

J96-100 Finite Element Analysis of Laminated Composites Using an Unmixing-Mixing Viscoplastic Model. Seung-Jo Kim and Eui-Sup Shin, *Seoul National University, Korea* (34, 3, p. 634) Technical Note

J96-101 Supersonic Flutter Analysis of Stiffened Isotropic and Anisotropic Panels. Dong-Min Lee and In Lee, *Korea Advanced Institute of Science and Technology* (34, 3, p. 637) Technical Note

J96-102 Boundary-Layer Transition on Swept Cylinders at Hypersonic Speeds. Akira Murakami, *National Aerospace Laboratory, Japan*; and Egon Stanewsky and Paul Krogmann, *DLR, German Aerospace Research Establishment* (34, 4, p. 649) Article based on AIAA Paper 95-2276

J96-103 Numerical Simulation of Transient Hypersonic Flow Using the Essentially Nonoscillatory Schemes. Chien-Erh Chiu and Xiaolin Zhong, *University of California, Los Angeles* (34, 4, p. 655) Article based on AIAA Paper 95-0469

J96-104 Flow Control over a Maneuvering Delta Wing at High Angles of Attack. Sandra M. Klute, Othon K. Rediniotis, and Demetri P. Telonis, *Virginia Polytechnic Institute and State University* (34, 4, p. 662) Article based on AIAA Paper 93-3494 CP935

- J96-105 Vortex Pairing as a Model for Jet Noise Generation.** R. C. K. Leung, S. K. Tang, I. C. K. Ho, and N. W. M. Ko, *University of Hong Kong* (34, 4, p. 669) Article
- J96-106 Viscous Drag Reduction Using Riblets on NACA 0012 Airfoil to Moderate Incidence.** S. Sundaram, P. R. Viswanath, and S. Rudrakumar, *National Aerospace Laboratories, India* (34, 4, p. 676) Article
- J96-107 Comparison of Temporal and Spatial Direct Numerical Simulation of Compressible Boundary-Layer Transition.** Yan Guo, Leonhard Kleiser, and Nikolaus A. Adams, *Swiss Federal Institute of Technology* (34, 4, p. 683) Article based on AIAA Paper 94-2371
- J96-108 Acceleration of Iterative Algorithms on Highly Clustered Grids.** Kwang-Yoon Choi, *Samsung Aerospace Industries, Ltd., Korea*; and George S. Dulikravich, *Pennsylvania State University* (34, 4, p. 691) Article
- J96-109 External Flow Computations Using Global Boundary Conditions.** S. V. Tsynkov, E. Turkel, and S. Abarbanel, *Tel-Aviv University, Israel* (34, 4, p. 700) Article based on AIAA Paper 95-0562
- J96-110 Adaptive Prismatic-Tetrahedral Grid Refinement and Redistribution for Viscous Flows.** V. Parthasarathy and Y. Kallinderis, *University of Texas at Austin* (34, 4, p. 707) Article
- J96-111 Grid Influence on Upwind Schemes for the Euler and Navier-Stokes Equations.** X. D. Zhang, J.-Y. Trépanier, M. Reggio, A. Benmeddour, and R. Camarero, *École Polytechnique de Montréal, Canada* (34, 4, p. 717) Article based on AIAA Paper 95-0347
- J96-112 Experimental Study of a Compressible Countercurrent Turbulent Shear Layer.** F. S. Alvi, A. Krothapalli, and D. Washington, *Florida A&M University and Florida State University* (34, 4, p. 728) Article based on AIAA Paper 95-0580
- J96-113 Numerical Simulations of Transitional Axisymmetric Coaxial Jets.** M. V. Salvetti, *University of Pisa, Italy*; and P. Orlandi and R. Verzicco, *University of Rome "La Sapienza", Italy* (34, 4, p. 736) Article
- J96-114 Navier-Stokes Simulations of Jet Flows on a Network of Workstations.** M. Ehtesham Hayder, *NASA Lewis Research Center*; and D. N. Jayasimha, *Ohio State University* (34, 4, p. 744) Article
- J96-115 Numerical Simulations of Three-Dimensional Drop Collisions.** M. R. H. Nobari, *University of Michigan*; and Grégar Tryggvason, *NASA Lewis Research Center* (34, 4, p. 750) Article based on AIAA Paper 94-0835
- J96-116 Comparison of Eddy Viscosity-Transport Turbulence Models for Three-Dimensional, Shock-Separated Flowfields.** Jack R. Edwards, *North Carolina State University*; and Suresh Chandra, *North Carolina A&T State University* (34, 4, p. 756) Article based on AIAA Paper 94-2275
- J96-117 Simulation of Multiple Shock-Shock Interference Patterns on a Cylindrical Leading Edge.** Kwen Hsu and Ijaz H. Parpia, *University of Texas at Arlington* (34, 4, p. 764) Article
- J96-118 Systematic Study of the Correlation Between Geometrical Disturbances and Flow Asymmetries.** Yuval Levy and Lambertus Hesselink, *Stanford University*; and David Degani, *Technion-Israel Institute of Technology* (34, 4, p. 772) Article based on AIAA Paper 95-0365
- J96-119 Supersonic-Inlet Boundary-Layer Bleed Flow.** Gary J. Harloff and Gregory E. Smith, *NYMA, Inc.* (34, 4, p. 778) Article based on AIAA Paper 95-0038
- J96-120 Nonclassical Effects on Divergence and Flutter of Anisotropic Swept Aircraft Wings.** G. Karpouzian, *U.S. Naval Academy*; and L. Librescu, *Virginia Polytechnic Institute and State University* (34, 4, p. 786) Article based on AIAA Paper 93-1535 CP931
- J96-121 Dynamic Effects of Piezoactuators on the Cylindrical Shell Response.** Venkata R. Sonti, *Automated Analysis Corporation*; and James D. Jones, *Purdue University* (34, 4, p. 795) Article
- J96-122 Three-Dimensional Analytical Solutions for Coupled Thermoelastoelectric Response of Multilayered Cylindrical Shells.** Kangming Xu and Ahmed K. Noor, *University of Virginia and NASA Langley Research Center* (34, 4, p. 802) Article
- J96-123 Cable-Stiffened Pantographic Deployable Structures Part I: Triangular Mast.** Z. You and S. Pellegrino, *University of Cambridge, England, UK* (34, 4, p. 813) Article
- J96-124 Mode Shape Expansion Techniques for Prediction: Experimental Evaluation.** Marie Levine-West, Mark Milman, and Andy Kissil, *Jet Propulsion Laboratory, California Institute of Technology* (34, 4, p. 821) Article
- J96-125 Probabilistic Component Mode Synthesis of Non-deterministic Substructures.** Andrew M. Brown, *NASA Marshall Space Flight Center*; and Aldo A. Ferri, *Georgia Institute of Technology* (34, 4, p. 830) Article based on AIAA Paper 95-1310 CP952
- J96-126 Aeroelastic Optimization of a Helicopter Rotor with Two-Cell Composite Blades.** Ranjan Ganguli and Inderjit Chopra, *University of Maryland* (34, 4, p. 835) Article
- J96-127 Comparison of Four Turbulence Models for Wall-Bounded Flows Affected by Transverse Curvature.** Anupam Dewan and Jaywant H. Arakeri, *Indian Institute of Science* (34, 4, p. 842) Technical Note
- J96-128 Performance of Eddy-Viscosity-Based Turbulence Models in Three-Dimensional Turbulent Interaction.** Datta Gaitonde and J. S. Shang, *U.S. Air Force Wright Laboratory*; and J. R. Edwards, *North Carolina State University* (34, 4, p. 844) Technical Note
- J96-129 Skewed Shear-Layer Mixing Within a Duct.** Thomas F. Fric, *General Electric Corporate R&D Center* (34, 4, p. 847) Technical Note based on AIAA Paper 95-0869
- J96-130 Supersonic Separation with Obstructions.** S. B. Verma and Vijay Gupta, *Indian Institute of Technology* (34, 4, p. 849) Technical Note
- J96-131 Solution-Adaptive Approach for Unsteady Flow Calculations on Quadrilateral-Triangular Meshes.** C. J. Hwang and J. M. Fang, *National Cheng Kung University, Taiwan, ROC* (34, 4, p. 851) Technical Note based on AIAA Paper 95-1723 CP956
- J96-132 Fluorescence Velocity Measurements in the Interior of a Hydrogen Arcjet Nozzle.** P. Victor Storm and Mark A. Capelli, *Stanford University* (34, 4, p. 853) Technical Note
- J96-133 Shape and Placement of Piezoelectric Sensors for Panel Flutter Limit-Cycle Suppression.** Zhihong Lai, Jen-Kuang Huang, and Chuh Mei, *Old Dominion University* (34, 4, p. 855) Technical Note
- J96-134 Optimal Sensor Location in Active Control of Flexible Structures.** Andrzej Maćkiewicz, *Technical University of Poznań, Poland*; Jan Holnicki-Szulc, *Polish Academy of Sciences, Poland*; and Francisco López-Almansa, *Technical University of Catalonia, Spain* (34, 4, p. 857) Technical Note
- J96-135 Simplified Calculation of Eigenvector Derivatives with Repeated Eigenvalues.** Da-tong Song, Wan-zhi Han, Su-

huan Chen, and Zhi-ping Qiu, *Jinlin University of Technology, PRC* (34, 4, p. 859) Technical Note

J96-136 Effects of Geometries, Clearances, and Friction on the Composite Multipin Joints. Seung Jo Kim and Jin Hee Kim, *Seoul National University, Korea* (34, 4, p. 862) Technical Note

J96-137 New Method for Deriving Eigenvalue Rate with Respect to Support Location. Zhong-sheng Liu and Hai-chang Hu, *Jilin University of Technology, PRC*; and Da-jun Wang, *Peking University, PRC* (34, 4, p. 864) Technical Note

J96-138 New Method for the Improvement of Measured Modes Through Orthogonalization. Ouqi Zhang and Aspasia Zervu, *Drexel University* (34, 4, p. 866) Technical Note

J96-139 Genetic Optimization of Target Pressure Distributions for Inverse Design Methods. Shigeru Obayashi, *Tohoku University, Japan*; and Susumu Takanashi, *National Aerospace Laboratory, Japan* (34, 5, p. 881) Article based on AIAA Paper 95-1649 CP956

J96-140 Optimized Compact Finite Difference Schemes with Maximum Resolution. Jae Wook Kim and Duck Joo Lee, *Korea Advanced Institute of Science and Technology* (34, 5, p. 887) Article

J96-141 Computation of Sound Radiating from Engine Inlets. Yusuf Özyörük and Lyle N. Long, *Pennsylvania State University* (34, 5, p. 894) Article

J96-142 Numerical Simulations of Flow Modification of Supersonic Rectangular Jets. Ronald Kolbe, Kazhikathra Kailasanath, Theodore Young, Jay Boris, and Alexandra Landsberg, *U.S. Naval Research Laboratory* (34, 5, p. 902) Article based on AIAA Paper 95-0725

J96-143 Calculation of the Radiated Sound Field Using an Open Kirchhoff Surface. Jonathan B. Freund, Sanjiva K. Lele, and Parviz Moin, *Stanford University* (34, 5, p. 909) Article

J96-144 Time-Domain Impedance Boundary Conditions for Computational Aeroacoustics. Christopher K. W. Tam and Laurent Auriault, *Florida State University* (34, 5, p. 917) Article

J96-145 Flow over an Obstacle Emerging from the Wall of a Channel. Henry A. Carlson and John L. Lumley, *Cornell University* (34, 5, p. 924) Article

J96-146 Turbulent Boundary Layer in an Adverse Pressure Gradient: Effectiveness of Riblets. J. R. Debisschop and F. T. M. Nieuwstadt, *Delft University of Technology, The Netherlands* (34, 5, p. 932) Article

J96-147 Solution-Adaptive Cartesian Cell Approach for Viscous and Inviscid Flows. William J. Coirier, *NASA Lewis Research Center*; and Kenneth G. Powell, *University of Michigan* (34, 5, p. 938) Article

J96-148 Self-Similar Viscous Incompressible Flow Along an Unbounded Corner. V. I. Vasiliev, *Central Institute of Aviation Motors, Russia* (34, 5, p. 946) Article

J96-149 Performance of a Hypersonic Twin-Nozzle System. Alfred E. Beylich, *Rheinisch Westfälischen Technischen Hochschule Aachen, Germany* (34, 5, p. 953) Article

J96-150 Newton-Krylov Methods for Low-Mach-Number Compressible Combustion. D. A. Knoll and P. R. McHugh, *Idaho National Engineering Laboratory*; and D. E. Keyes, *Old Dominion University* (34, 5, p. 961) Article based on AIAA Paper 95-1672 CP956

J96-151 Experimental Study of a Normal Shock/Homogeneous Turbulence Interaction. S. Barre, D. Alem, and J. P. Bonnet, *Université de Poitiers, France* (34, 5, p. 968) Article

based on AIAA Paper 95-0759
Errata (34, 7, p. 1540)

J96-152 Statistical Saturation of Buoyant Flow Induced by a Fluctuating Acceleration. J. Ross Thomson, *Florida State University*; and Jorge Viñals, *Florida A&M University and Florida State University* (34, 5, p. 975) Article

J96-153 Experimental and Numerical Investigations of Dynamic Stall on a Pitching Airfoil. Philippe Wernert, *ISL, French-German Institute of Saint-Louis, France*; and Wolfgang Geissler, Markus Raffel, and Jürgen Kompenhans, *DLR, German Aerospace Research Establishment* (34, 5, p. 982) Article

J96-154 Evaluation of the Dynamic Model for Simulations of Compressible Decaying Isotropic Turbulence. Evangelos T. Spyropoulos and Gregory A. Blaisdell, *Purdue University* (34, 5, p. 990) Article based on AIAA Paper 95-0355

J96-155 Interaction of Missile Nose-Tip Vortices with a Control Surface. John W. Kiedaisch and Mukund Acharya, *Illinois Institute of Technology* (34, 5, p. 999) Article

J96-156 Laser Doppler Anemometer Measurements of Turbulent Boundary Layer over a Riblet Surface. L. Djenidi and R. A. Antonia, *University of Newcastle, Australia* (34, 5, p. 1007) Article

J96-157 Evaluation of Correlated Bias Approximations in Experimental Uncertainty Analysis. Kendall K. Brown and Hugh W. Coleman, *University of Alabama in Huntsville*; and W. Glenn Steele and Robert P. Taylor, *Mississippi State University* (34, 5, p. 1013) Article based on AIAA Paper 94-0772

J96-158 Holographic Interferometric Tomography for Limited Data Reconstruction. Don J. Cha and Soyoung S. Cha, *University of Illinois at Chicago* (34, 5, p. 1019) Article based on AIAA Paper 95-2194

J96-159 Time-Domain Analysis of Low-Speed Airfoil Flutter. K. D. Jones and M. F. Platzer, *U.S. Naval Postgraduate School* (34, 5, p. 1027) Article

J96-160 Curved Piezoactuator Model for Active Vibration Control of Cylindrical Shells. Venkata R. Sonti, *Automated Analysis Corporation*; and James D. Jones, *Purdue University* (34, 5, p. 1034) Article

J96-161 Vibratory Characteristics of Pretwisted Cantilever Trapezoids of Unsymmetric Laminates. K. M. Liew and C. W. Lim, *Nanyang Technological University, Singapore* (34, 5, p. 1041) Article

J96-162 Modal Synthesis When Modeling Damping by Use of Fractional Derivatives. Åsa Fenander, *Chalmers University of Technology, Sweden* (34, 5, p. 1051) Article based on AIAA Paper 95-1182 CP952

J96-163 Robust Design for Unconstrained Optimization Problems Using the Taguchi Method. Kwon-Hee Lee, In-Sup Eom, Gyung-Jin Park, and Wan-Ik Lee, *Hanyang University, Korea* (34, 5, p. 1059) Article

J96-164 Vibrations and Buckling of Cross-Ply Nonsymmetric Laminated Composite Beams. H. Abramovich, M. Eisenberger, and O. Shulepov, *Technion-Israel Institute of Technology* (34, 5, p. 1064) Article based on AIAA Paper 95-1459 CP952

J96-165 Scaling of the Bursting Frequency for Turbulent Boundary Layers Approaching Separation. T. G. Tillman, *United Technologies Research Center*; and A. L. Kistler, *Northwestern University* (34, 5, p. 1070) Technical Note

J96-166 Drag Reduction with the Slip Wall. D. W. Bechert, *DLR, German Aerospace Research Establishment*; and W. Hage

and M. Brusek, *Technische Universität Berlin, Germany* (34, 5, p. 1072) Technical Note

J96-167 Limitations of Traditional Finite Volume Discretizations for Unsteady Computational Fluid Dynamics. J. Russell Manson, *Bucknell University*; Gareth Pender, *Glasgow University, Scotland, UK*; and Steve G. Wallis, *Heriot-Watt University, Scotland, UK* (34, 5, p. 1074) Technical Note

J96-168 Simulating Heat Addition via Mass Addition in Variable Area Compressible Flows. W. H. Heiser, W. B. McClure, and C. W. Wood, *U.S. Air Force Academy* (34, 5, p. 1076) Technical Note

J96-169 Dusty Shock Flow with Unstructured Adaptive Finite Elements and Parcels. S. Sivier and E. Loth, *University of Illinois at Urbana-Champaign*; J. Baum, *Science Applications International Corporation*; and R. Löhner, *George Mason University* (34, 5, p. 1078) Technical Note

J96-170 Transonic Equivalence Rule Involving Lift and Shocks. H. K. Cheng and Shijun Luo, *University of Southern California* (34, 5, p. 1080) Technical Note

J96-171 Eigenvector Derivatives of Structures with Rigid Body Modes. R. M. Lin and M. K. Lim, *Nanyang Technological University, Singapore* (34, 5, p. 1083) Technical Note

J96-172 Parametric Effects on Lift Force of an Airfoil in Unsteady Freestream. Ismet Gursul, *University of Cincinnati*; Hank Lin, *University of Southern California*; and Chih-Ming Ho, *University of California, Los Angeles* (34, 5, p. 1085) Technical Note

J96-173 Iterative Method for Calculating Derivatives of Eigenvectors. Ouqi Zhang and Aspasia Zerva, *Drexel University* (34, 5, p. 1088) Technical Note

J96-174 Spatial Transformation of the Discrete Sound Field from a Propeller. X. D. Li and S. Zhou, *Beijing University of Aeronautics and Astronautics, PRC* (34, 6, p. 1097) Article based on AIAA Paper 95-0180

J96-175 Forward Motion Effects on Jet Noise, Panel Vibration, and Radiation. A. Bayliss, *Northwestern University*; L. Maestrello, *NASA Langley Research Center*; J. L. McGreevy, *Philadelphia College of Pharmacy and Science*; and C. C. Fenno Jr., *National Research Council* (34, 6, p. 1103) Article

J96-176 Two-Layer Approximate Boundary Conditions for Large-Eddy Simulations. Elias Balaras and Carlo Benocci, *von Kármán Institute for Fluid Dynamics, Belgium*; and Ugo Piomelli, *University of Maryland* (34, 6, p. 1111) Article

J96-177 Automatic Grid Generation and Flow Solution for Complex Geometries. Richard J. Smith and Leslie J. Johnston, *UMIST, England, UK* (34, 6, p. 1120) Article based on AIAA Paper 95-0214

J96-178 Comparison of Numerical and Analytical Jacobians. Kirk J. Vanden, *U.S. Air Force Wright Laboratory*; and Paul D. Orkwis, *University of Cincinnati* (34, 6, p. 1125) Article based on AIAA Paper 94-0176

J96-179 High-Enthalpy, Hypersonic Compression Corner Flow. S. G. Mallinson, S. L. Gai, and N. R. Mudford, *Australian Defence Force Academy* (34, 6, p. 1130) Article based on AIAA Paper 95-0155

J96-180 Three-Dimensional Wake Formations Behind a Family of Regular Polygonal Plates. H. Higuchi, R. W. Anderson, and J. Zhang, *Syracuse University* (34, 6, p. 1138) Article

J96-181 Investigation of Large-Scale Structures in Supersonic Planar Base Flows. K. M. Smith and J. C. Dutton, *University of*

Illinois at Urbana-Champaign (34, 6, p. 1146) Article based on AIAA Paper 95-2251

J96-182 Velocity and Turbulence Measurements in a Supersonic Base Flow with Mass Bleed. Tarun Mathur and J. Craig Dutton, *University of Illinois at Urbana-Champaign* (34, 6, p. 1153) Article based on AIAA Paper 95-0456

J96-183 Simulations of Particle Dynamics in a Confined Shear Flow. E. J. Chang and K. Kailasanath, *U.S. Naval Research Laboratory* (34, 6, p. 1160) Article based on AIAA Paper 95-0812

J96-184 Numerical Investigation of Shock Wave Reflections in Steady Flows. J. Vuillon and D. Zeitoun, *Université de Provence, France*; and G. Ben-Dor, *Ben-Gurion University of the Negev, Israel* (34, 6, p. 1167) Article

J96-185 Unsteady Pressure Loads Generated by Swept-Shock-Wave/Boundary-Layer Interactions. Sanjay Garg and Gary S. Settles, *Pennsylvania State University* (34, 6, p. 1174) Article

J96-186 Stability of Leading-Edge Vortex Pair on a Slender Delta Wing. Ming-Ke Huang and Chuen-Yen Chow, *University of Colorado* (34, 6, p. 1182) Article

J96-187 Examination of Vortex Deformation During Blade-Vortex Interaction. M. B. Horner, R. A. McD. Galbraith, and F. N. Coton, *University of Glasgow, Scotland, UK*; and J. N. Stewart and I. Grant, *Heriot-Watt University, Scotland, UK* (34, 6, p. 1188) Article

J96-188 Role of Secondary Vorticity in Parallel Blade-Vortex Interactions. Michael Rex Maixner, *U.S. Naval Postgraduate School* (34, 6, p. 1195) Article

J96-189 Numerical Investigation of Supersonic Wing-Tip Vortices. Donald P. Rizzetta, *U.S. Air Force Wright Laboratory* (34, 6, p. 1203) Article based on AIAA Paper 95-2282

J96-190 Particle Size Distribution Technique Using Conventional Laser Doppler Velocimetry Measurements. Mark S. Maurice, *U.S. Air Force Wright Laboratory* (34, 6, p. 1209) Article

J96-191 Continuous Wave Hydrogen Fluoride Overtone Lasing Saturation Effects on Fundamental Gain Suppression. P. T. Theodoropoulos, L. H. Sentman, D. L. Carroll, R. E. Waldo, S. J. Gordon, and J. W. Otto, *University of Illinois at Urbana-Champaign* (34, 6, p. 1216) Article

J96-192 Active Panel Flutter Suppression Using Self-Sensing Piezoactuators. F. Döngi, D. Dinkler, and B. Kröplin, *University of Stuttgart, Germany* (34, 6, p. 1224) Article based on AIAA Paper 95-1078 CP952

J96-193 Coupled Layerwise Analysis of Thermopiezoelectric Composite Beams. Ho-Jun Lee and Dimitris A. Saravanos, *NASA Lewis Research Center* (34, 6, p. 1231) Article

J96-194 Improved Theory for Contact Indentation of Sandwich Panels. Robin Olsson and Hugh L. McManus, *Massachusetts Institute of Technology* (34, 6, p. 1238) Article based on AIAA Paper 95-1374 CP952

J96-195 Bounding the Transient Response of Structures to Uncertain Disturbances. L. D. Peterson, *University of Colorado* (34, 6, p. 1245) Article

J96-196 Use of the Energy Flow Concept in Vibration Design. K. S. Alfredsson, B. L. Josefson, and M. A. Wilson, *Chalmers University of Technology, Sweden* (34, 6, p. 1250) Article based on AIAA Paper 95-1497 CP952

J96-197 Optimal Ritz Vectors for Component Mode Synthesis Using the Singular Value Decomposition. Etienne Balmès, *ONERA, France* (34, 6, p. 1256) Article

J96-198 Improved Transient Response Approximation for General Damped Systems. A. E. Sepulveda, *University of California, Los Angeles*; and H. L. Thomas, *Structural Optimization Specialists* (34, 6, p. 1261) Article

J96-199 Stability of Gyroelastic Beams. K. Yamanaka, G. R. Heppler, and K. Huseyin, *University of Waterloo, Canada* (34, 6, p. 1270) Article

J96-200 Delamination Buckling and Postbuckling of Composite Cylindrical Shells. Haozhong Gu and Aditi Chattopadhyay, *Arizona State University* (34, 6, p. 1279) Article

J96-201 Primitive Variable Implicit Approach for Compressible Chemical Vapor Deposition. Christopher D. Moen and Harry A. Dwyer, *University of California, Davis* (34, 6, p. 1287) Technical Note

J96-202 Rotating Dissipation for Accurate Shock Capture. C. de Nicola, *University of Naples "Federico II", Italy*; G. Iaccarino, *Centro Italiano Ricerche Aerospaziali, Italy*; and R. Tognaccini, *University of Naples "Federico II", Italy* (34, 6, p. 1289) Technical Note

J96-203 Modeling Mass Entrainment in a Quasi-One-Dimensional Shock Tube Code. C. J. Doolan and P. A. Jacobs, *University of Queensland, Australia* (34, 6, p. 1291) Technical Note

J96-204 Hyperbolic Equation Method of Grid Generation for Enclosed Regions. Yih Nen Jeng, *National Cheng Kung University, Taiwan, ROC*; and Yuan-Chang Liou, *Kung Shan Institute of Technology and Commerce, Taiwan, ROC* (34, 6, p. 1293) Article

J96-205 Calculation of Interlaminar Stresses in Laminated Plates Using Walsh Transforms. Martin Crane and J. T. Boyle, *University of Strathclyde, Scotland, UK* (34, 6, p. 1295) Technical Note

J96-206 Iterative Calculation of the Transverse Shear Distribution in Laminated Composite Beams. J. A. Zapfe and G. A. Lesieutre, *Pennsylvania State University* (34, 6, p. 1299) Technical Note based on AIAA Paper 95-1501 CP952

J96-207 Determination of Rigidities of Fiber-Reinforced Plastic Laminates Using Holographic Interferometry. T. Maeda and T. Koga, *University of Tsukuba, Japan* (34, 6, p. 1301) Technical Note based on AIAA Paper 95-1216 CP952

J96-208 Three-Dimensional Shock/Boundary-Layer Interaction Using Reynolds Stress Equation Turbulence Model. Ge-Cheng Zha and Doyle Knight, *Rutgers University* (34, 7, p. 1313) Article

J96-209 Implicit Computation of Three-Dimensional Compressible Navier-Stokes Equations using $k-\epsilon$ Turbulence Closure. G. A. Gerolymos and I. Vallet, *Université Pierre-et-Marie-Curie, France* (34, 7, p. 1321) Article

J96-210 Computation of Unsteady Three-Dimensional Transonic Nozzle Flows Using $k-\epsilon$ Turbulence Closure. G. A. Gerolymos and I. Vallet, *Université Pierre-et-Marie-Curie, France*; and A. Böls and P. Ott, *Ecole Polytechnique Fédérale de Lausanne, Switzerland* (34, 7, p. 1331) Article

J96-211 Numerical Simulation of the Blast-Wave Accelerator. Dennis Wilson, Zhiqiang Tan, and Philip L. Varghese, *University of Texas at Austin* (34, 7, p. 1341) Article based on AIAA Paper 94-1994 CP946

J96-212 Simulating Moth Wing Aerodynamics: Towards the Development of Flapping-Wing Technology. Michael J. C. Smith, *Purdue University* (34, 7, p. 1348) Article based on AIAA Paper 95-0743

J96-213 Performance of Three-Dimensional Compressible Navier-Stokes Codes at Low Mach Numbers. William E. Milholen II and Ndaona Chokani, *North Carolina State University*; and J. Al-Saadi, *NASA Langley Research Center* (34, 7, p. 1356) Article based on AIAA Paper 95-0767

J96-214 Parallelization of Direct Simulation Monte Carlo Method Combined with Monotonic Lagrangian Grid. C. K. Oh and R. S. Sinkovits, *U.S. Naval Research Laboratory*; B. Z. Cybyk, *U.S. Air Force Wright Laboratory*; and E. S. Oran and J. P. Boris, *U.S. Naval Research Laboratory* (34, 7, p. 1363) Article

J96-215 Data-Parallel Lower-Upper Relaxation Method for the Navier-Stokes Equations. Michael J. Wright, Graham V. Candler, and Marco Prampolini, *University of Minnesota* (34, 7, p. 1371) Article

J96-216 Comparison of Maximum Entropy Direct Simulation Monte Carlo Code with Flowfield Measurements. Michael A. Gallis and John K. Harvey, *Imperial College of Science, Technology, and Medicine, England, UK* (34, 7, p. 1378) Article

J96-217 Investigation of the Mixing Flow Structure in Multi-lobe Mixers. Yeng-Yung Tsui and Po-Wenn Wu, *National Chiao Tung University, Taiwan, ROC* (34, 7, p. 1386) Article

J96-218 Modeling of Dust Entrainment by High-Speed Airflow. M. Richard Denison and Philip A. Hookham, *Titan Corporation* (34, 7, p. 1392) Article based on AIAA Paper 95-2206

J96-219 Near-Limit Oscillations of Spherical Diffusion Flames. S. Cheatham and M. Matalon, *Northwestern University* (34, 7, p. 1403) Article based on AIAA Paper 96-0260

J96-220 Unsteady Aerodynamics Associated with a Horizontal-Axis Wind Turbine. Stephen A. Huyer, David Simms, and Michael C. Robinson, *National Renewable Energy Laboratory* (34, 7, p. 1410) Article

J96-221 Analysis of Compressible Light Dynamic Stall Flow at Transitional Reynolds Numbers. R. D. Van Dyken, *U.S. Naval Air Warfare Center*; and J. A. Ekaterinaris, M. S. Chandrasekhara, and M. F. Platzer, *U.S. Naval Postgraduate School* (34, 7, p. 1420) Article based on AIAA Paper 94-2255

J96-222 Analysis of Unsteady Supersonic Viscous Flows by a Shock-Fitting Technique. F. Nasuti and M. Onofri, *University of Rome "La Sapienza", Italy* (34, 7, p. 1428) Article based on AIAA Paper 95-2159

J96-223 Unsteady Aerodynamic Model of Flapping Wings. Michael S. Vest and Joseph Katz, *San Diego State University* (34, 7, p. 1435) Article based on AIAA Paper 95-0747

J96-224 Solution for Spin-Up from Rest of Liquid with a Free Surface. Kwan Yeop Kim and Jae Min Hyun, *Korea Advanced Institute of Science and Technology* (34, 7, p. 1441) Article

J96-225 Trailing-Edge Jet Control of Leading-Edge Vortices of a Delta Wing. Chiang Shih and Zhong Ding, *Florida A&M University and Florida State University* (34, 7, p. 1447) Article
Errata (34, 12, p. 2642)

J96-226 Asymmetric Systematic Uncertainties in the Determination of Experimental Uncertainty. W. G. Steele, *Mississippi State University*; P. K. Maciejewski, *University of Pittsburgh*; C. A. James and R. P. Taylor, *Mississippi State University*; and H. W. Coleman, *University of Alabama in Huntsville* (34, 7, p. 1458) Article based on AIAA Paper 94-2585

J96-227 Methods for Visualizing Hypersonic Shock-Wave/Boundary-Layer Interaction Using Electrical Discharges. Masatoshi Nishio, *Fukuyama University, Japan* (34, 7, p. 1464) Article

- J96-228 Parallel Computing for Analysis of Variable Geometry Trusses.** Mitsunori Miki, *Doshisha University, Japan*; and Takahiro Koita, *Nara Institute of Science and Technology, Japan* (34, 7, p. 1468) Article based on AIAA Paper 95-1307 CP952
- J96-229 Free Vibration of Thick Generally Laminated Cantilever Quadrilateral Plates.** Rakesh K. Kapania and Andrew E. Lovejoy, *Virginia Polytechnic Institute and State University* (34, 7, p. 1474) Article based on AIAA Paper 95-1350 CP952
- J96-230 Constrained Layer Damping of Tubular Truss Members.** Hamid R. Adib-Jahromi, Ramesh B. Malla, and Michael L. Accorsi, *University of Connecticut* (34, 7, p. 1487) Article
- J96-231 Bimodal Bound of System Reliability for Random Composite Structures.** J. S. Park, C. G. Kim, and C. S. Hong, *Korea Advanced Institute of Science and Technology* (34, 7, p. 1494) Article
- J96-232 Optimization for Minimum Sensitivity to Uncertain Parameters.** Jocelyn I. Pritchard, Howard M. Adelman, and Jaroslaw Sobieszczanski-Sobieski, *NASA Langley Research Center* (34, 7, p. 1501) Article
- J96-233 Quasistatic Optimal Actuator Placement with Minimum Worst Case Distortion Criterion.** Saki Hakim and Maurice Bernard Fuchs, *Tel-Aviv University, Israel* (34, 7, p. 1505) Article based on AIAA Paper 95-1137 CP952
- J96-234 Analytical and Experimental Comparison of Probabilistic and Deterministic Optimization.** G. Maglaras, E. Ponslet, R. T. Haftka, E. Nikolaidis, P. Sensharma, and H. H. Cudney, *Virginia Polytechnic Institute and State University* (34, 7, p. 1512) Article
- J96-235 Two-Step Component-Mode Synthesis for the Eigen-solution of Large Systems.** Anand Ramani and Charles E. Knight, *Virginia Polytechnic Institute and State University* (34, 7, p. 1519) Article
- J96-236 Viscoelastic Analysis of Thick-Walled Filament-Wound Composite Cylinders with Elevated Temperatures.** Jerome T. Tzeng and Larry S. Chien, *U.S. Army Research Laboratory* (34, 7, p. 1526) Technical Note
- J96-237 Correlation of Shock Angles Caused by Rhombic Delta Wings.** S. Koide, C. J. W. Griesel, and J. L. Stollery, *Cranfield University, Japan* (34, 7, p. 1529) Technical Note
- J96-238 Eigenvector Derivatives for Doubly Repeated Eigenvalues.** Ting-Yu Chen, *National Chung-Hsing University, Taiwan, ROC* (34, 7, p. 1531) Technical Note
- J96-239 Topology Optimization with Superelements.** R. J. Yang and C. M. Lu, *Ford Motor Company* (34, 7, p. 1533) Technical Note
- J96-240 Sensitivity Analysis of the Aeroacoustic Response of Turbomachinery Blade Rows.** Christopher B. Lorence and Kenneth C. Hall, *Duke University* (34, 8, p. 1545) Article based on AIAA Paper 95-0166
- J96-241 Structure of Coherent Instabilities in a Supersonic Shear Layer.** Steven Martens, Kevin W. Kinzie, and Dennis K. McLaughlin, *Pennsylvania State University* (34, 8, p. 1555) Article based on AIAA Paper 94-0822
- J96-242 Aeroacoustic Properties of a Supersonic Diamond-Shaped Jet.** F. S. Alvi, A. Krothapalli, D. Washington, and C. J. King, *Florida A&M University and Florida State University* (34, 8, p. 1562) Article based on AIAA Paper 95-169
- J96-243 Low-Reynolds-Number Separation on an Airfoil.** J. C. Muti Lin and Laura L. Pauley, *Pennsylvania State University* (34, 8, p. 1570) Article
- J96-244 Eigenmode Analysis in Unsteady Aerodynamics: Reduced-Order Models.** Earl H. Dowell, *Duke University* (34, 8, p. 1578) Article based on AIAA Paper 95-1450 CP952
- J96-245 Continuous Optical Discharge Stabilized by Gas Flow in Weakly Focused Laser Beam.** R. Conrad, *U.S. Army Missile Research Development and Engineering Center*; and Yu. P. Raizer and S. T. Sarzhikov, *Russian Academy of Sciences* (34, 8, p. 1584) Article
- J96-246 Fundamental Gain Suppression Mechanisms in a Continuous Wave Hydrogen Fluoride Overtone Laser.** P. T. Theodoropoulos and L. H. Sentman, *University of Illinois at Urbana-Champaign* (34, 8, p. 1589) Article
- J96-247 Heuristic Method for Evaluating Coil Performance.** John Hon, *Rockwell International/Rocketdyne*; D. N. Plummer, P. G. Crowell, and J. Erkkila, *Logicon RDA*; and G. D. Hager, C. Helms, and K. Truesdell, *U.S. Air Force Phillips Laboratory* (34, 8, p. 1595) Article based on AIAA Paper 94-2422
- J96-248 Computer-Controlled Multiparameter Flowfield Measurements Using Planar Laser-Induced Iodine Fluorescence.** James M. Donohue and James C. McDaniel Jr., *University of Virginia* (34, 8, p. 1604) Article based on AIAA Paper 93-0048
- J96-249 Electrothermoelastic Behavior of Piezoelectric Coupled Cylinders.** Mike Stam and Greg Carman, *University of California, Los Angeles* (34, 8, p. 1612) Article
- J96-250 Central and Noncentral Normal Impact on Orthotropic Composite Cylindrical Shells.** S. W. Gong, V. P. W. Shim, and S. L. Toh, *National University of Singapore* (34, 8, p. 1619) Article
- J96-251 Thick Beam Theory and Finite Element Model with Zig-Zag Sublaminar Approximations.** R. C. Averill and Y. C. Yip, *Michigan State University* (34, 8, p. 1627) Article
- J96-252 Analytical Solution for Low-Velocity Impact Response of Composite Plates.** Michael O. Pierson and Reza Vaziri, *University of British Columbia, Canada* (34, 8, p. 1633) Article
- J96-253 Structural Synthesis with Reliability Constraints Using Approximation Concepts.** Abdon E. Sepulveda, *University of California, Los Angeles* (34, 8, p. 1641) Article based on AIAA Paper 94-1414 CP942
- J96-254 Damage Localization in Structures Without Baseline Modal Parameters.** Norris Stubbs, *Texas A&M University*; Jeong-Tae Kim, *National Fisheries University of Pusan, Korea* (34, 8, p. 1644) Article
- J96-255 Effect of Ply-Drop Configuration on Delamination Strength of Tapered Composite Structures.** Anthony D. Botting, Anthony J. Vizzini, and Sung W. Lee, *University of Maryland* (34, 8, p. 1650) Article
- J96-256 Intrinsic Equations for the Nonlinear Dynamics of Space Beams.** A. Libai, *Technion-Israel Institute of Technology* (34, 8, p. 1657) Article
- J96-257 Component Mode Synthesis for Nonclassically Damped Systems.** Alexander Muravov and Stanley G. Hutton, *University of British Columbia, Canada* (34, 8, p. 1664) Article
- J96-258 Accurate Computation of Design Sensitivities for Dynamically Loaded Structures with Displacement Constraints.** A. C. Paul, A. Dutta, and C. V. Ramakrishnan, *Indian Institute of Technology, India* (34, 8, p. 1670) Article
- J96-259 Estimation of Reciprocal Residual Flexibility from Experimental Modal Data.** Scott W. Doebling, *Los Alamos National Laboratory*; Lee D. Peterson, *University of Colorado*; and

- Kenneth F. Alvin, *Sandia National Laboratories* (34, 8, p. 1678) Article based on AIAA Paper 95-1092 CP952
- J96-260 Behavior of Spinning Pretwisted Composite Plates Using a Nonlinear Finite Element Approach.** Ravinder Bhumbra and John B. Kosmatka, *University of California, San Diego* (34, 8, p. 1686) Article
- J96-261 One-Dimensional Finite Elements Based on the Daubechies Family of Wavelets.** Richard D. Patton and Patrick C. Marks, *Mississippi State University* (34, 8, p. 1696) Article based on AIAA Papers 95-1444 and 95-1393 CP952
- J96-262 Minimum Weight Design of Laminated Composite Plates Subject to Strength Constraint.** T. Y. Kam, F. M. Lai, and S. C. Liao, *National Chiao Tung University, Taiwan, ROC* (34, 8, p. 1699) Article
- J96-263 Generalized Hybrid Method for Fuzzy Multiobjective Optimization of Engineering Systems.** S. S. Rao and Li Chen, *Purdue University* (34, 8, p. 1709) Article
- J96-264 Minimization of the Mass of Multilayer Plates at Impulse Loading.** A. N. Shupikov, N. V. Smetankina, and H. A. Sheldudko, *National Academy of Sciences of the Ukraine* (34, 8, p. 1718) Article
- J96-265 Explicit Unconditionally Stable Approaches for Built-Up Shell Structural Configurations.** Xiaolin Chen, Kumar K. Tamma, and Desong Sha, *University of Minnesota* (34, 8, p. 1725) Article
- J96-266 Multiaxis Fluidic Thrust Vector Control of a Supersonic Jet Using Counterflow.** D. M. Washington and F. S. Alvi, *Florida A&M University and Florida State University*; P. J. Strykowski, *University of Minnesota*; and A. Krothapalli, *Florida A&M University and Florida State University* (34, 8, p. 1734) Technical Note
- J96-267 Three-Dimensional Velocity Measurements Within Görtler Vortices.** J. A. Rothenflue and P. I. King, *U.S. Air Force Institute of Technology* (34, 8, p. 1736) Technical Note
- J96-268 Navier-Stokes Simulation of a Cone-Derived Waverider with Multidirectional Curvature.** Sheam-Chyun Lin and Ming-Chiou Shen, *National Taiwan Institute of Technology, ROC* (34, 8, p. 1739) Technical Note based on AIAA Paper 96-0313
- J96-269 Momentum and Vortex Theory of Rotor Blade Wakes.** Walter C. Hassenpflug, *University of Stellenbosch, South Africa* (34, 8, p. 1741) Technical Note
- J96-270 Predictive Capabilities of Turbulence Models for a Confined Swirling Flow.** Yong G. Lai, *CFD Research Corporation* (34, 8, p. 1743) Technical Note
- J96-271 Ionizational Nonequilibrium Induced by Neutral Chemistry in Air Plasmas.** Christophe O. Laux, Richard J. Gessman, and Charles H. Kruger, *Stanford University* (34, 8, p. 1745) Technical Note
- J96-272 Flow Visualization of an Oscillating Airfoil with Sawtooth Trailing Edge.** Roy Y. Myose and Jiro Iwata, *Wichita State University* (34, 8, p. 1748) Technical Note based on AIAA Paper 95-0308
- J96-273 Vortex-Wake Characteristics of a Supersonic Transport Wing Planform at Mach 2.5.** F. Y. Wang, P. M. Sforza, and R. Pascali, *Polytechnic University* (34, 8, p. 1750) Technical Note
- J96-274 Dynamic Buckling of Long Thin Elastic Plate Under Rapidly Applied Shear Loading.** Emil T. Dankov, *University of Cincinnati* (34, 8, p. 1752) Technical Note
- J96-275 Three-Dimensional Aerodynamic Shape Optimization Using Discrete Sensitivity Analysis.** Greg W. Burgreen and Oktay Baysal, *Old Dominion University* (34, 9, p. 1761) Article based on AIAA Paper 94-0094
- J96-276 Effect of Inlet Reflections on Fan Noise Radiation.** H. D. Meyer, *United Technologies Corporation* (34, 9, p. 1771) Article
- J96-277 Sound Propagation and Radiation in a Curved Duct.** P. Malbékui and C. Glandier, *ONERA, France*; and C. Reynier, *Institut National des Sciences Appliquées de Rouen, France* (34, 9, p. 1778) Article based on AIAA Paper 93-4376
- J96-278 Hybrid Computational Model for Noise Propagation Through a Fuselage Boundary Layer.** Harmen Schippers, *National Aerospace Laboratory NLR, The Netherlands*; and Jeroen A. Wensing, *University of Twente, The Netherlands* (34, 9, p. 1785) Article
- J96-279 Spatial Evolution of Görtler Instability in a Curved Duct of High Curvature.** Philippe Petitjeans and José-Eduardo Westfreid, *Ecole Supérieure de Physique et de Chimie Industrielles, France* (34, 9, p. 1793) Article
- J96-280 Three-Dimensional Hyperbolic Grid Generation with Inherent Dissipation and Laplacian Smoothing.** C. H. Tai, D. C. Chiang, and Y. P. Su, *Chung Cheng Institute of Technology, Taiwan, ROC* (34, 9, p. 1801) Article
- J96-281 Pseudotime Method for Shape Design of Euler Flows.** Angelo Iollo, *Politecnico di Torino, Italy*; Geojoe Kuruvila, *Vi-GYAN, Inc.*; and Shlomo Ta'asan, *Institute for Computer Applications in Science and Engineering* (34, 9, p. 1807) Article
- J96-282 Characteristic Features of Large Structures in Compressible Mixing Layers.** N. L. Messersmith, *Purdue University*; and J. C. Dutton, *University of Illinois at Urbana-Champaign* (34, 9, p. 1814) Article
- J96-283 Coaxial Jets from Lobed-Mixer Nozzles.** R. Ramesh Kumar and Job Kurian, *Indian Institute of Technology* (34, 9, p. 1822) Article
- J96-284 Uncoupled Temporally Second-Order Accurate Implicit Solver of Incompressible Navier-Stokes Equations.** Moshe Rosenfeld, *Tel-Aviv University, Israel* (34, 9, p. 1829) Article based on AIAA Paper 95-1741 CP956
- J96-285 Two-Dimensional Model for Spark Discharge Simulation in Air.** M. Akram, *Lund Institute of Technology, Sweden* (34, 9, p. 1835) Article
- J96-286 Equilibrium Vibrational Properties of Ground State Nitrogen up to 35,000 K.** C. Frederick Hansen, *University of Oregon* (34, 9, p. 1843) Article
- J96-287 Acoustic Response of Droplet Flames to Pressure Oscillations.** C. H. Sohn and S. H. Chung, *Seoul National University, Korea*; and J. S. Kim and F. A. Williams, *University of California, San Diego* (34, 9, p. 1847) Article
- J96-288 Interaction of Supersonic Wing-Tip Vortices with a Normal Shock.** Iraj M. Kalkhoran, Michael K. Smart, and Alexander Betti, *Polytechnic University* (34, 9, p. 1855) Article based on AIAA Paper 95-2283
- J96-289 Effect of Correlated Precision Errors on Uncertainty of a Subsonic Venturi Calibration.** S. T. Hudson and W. J. Borden Jr., *NASA Marshall Space Flight Center*; and H. W. Coleman, *University of Alabama in Huntsville* (34, 9, p. 1862) Article based on AIAA Paper 95-0797
- J96-290 Modal Control of Piezolaminated Anisotropic Rectangular Plates Part 1: Modal Transducer Theory.** Scott E.

Miller, Yaakov Oshman, and Haim Abramovich, *Technion—Israel Institute of Technology* (34, 9, p. 1868) Article

J96-291 Modal Control of Piezolaminated Anisotropic Rectangular Plates Part 2: Control Theory. Scott E. Miller, Yaakov Oshman, and Haim Abramovich, *Technion—Israel Institute of Technology* (34, 9, p. 1876) Article

J96-292 Finite Element Model for Active Control of Intelligent Structures. B. Samanta, *Sultan Qaboos University, Oman*; M. C. Ray, *Jessop and Company, Ltd., India*; and R. Bhattacharyya, *Indian Institute of Technology* (34, 9, p. 1885) Article

J96-293 Multidomain Modeling and Analysis of Delaminated Stiffened Composite Shells. B. P. Naganarayana, B. Z. Huang, and S. N. Atluri, *Georgia Institute of Technology* (34, 9, p. 1894) Article

J96-294 Micromechanics of Composites with Shape Memory Alloy Fibers in Uniform Thermal Fluids. Victor Birman, *University of Missouri—Rolla*; Dimitris A. Saravanos, *Ohio Aerospace Institute*; and Dale A. Hopkins, *NASA Lewis Research Center* (34, 9, p. 1905) Article based on AIAA Paper 95-1210 CP952

J96-295 Cross-Sectional Analysis of Composite Beams Including Large Initial Twist and Curvature Effects. Carlos E. S. Cesnik and Dewey H. Hodges, *Georgia Institute of Technology*; and Vladislav G. Sutyris, *Wayne State University* (34, 9, p. 1913) Article based on AIAA Paper 95-1500 CP952

J96-296 Optimum Placement of Piezoelectric Sensor/Actuator for Vibration Control of Laminated Beams. Young Kyu Kang, Hyun Chul Park, Woonbong Hwang, and Kyung Seop Han, *Pohang University of Science and Technology, Korea* (34, 9, p. 1921) Article

J96-297 Enriched Finite Elements for Regions with Multiple, Interacting Singular Fields. Stephane S. Pageau and Sherrill B. Biggers Jr., *Clemson University* (34, 9, p. 1927) Article

J96-298 Nonlinear Response of Long Orthotropic Tubes Under Bending Including the Brazier Effect. Brian F. Tatting and Zafer Gurdal, *Virginia Polytechnic and State University*; and Valery V. Vasiliev, *Moscow State University of Aviation Technology* (34, 9, p. 1934) Article

J96-299 Aerodynamic Lift at Reynolds Numbers Below 7×10^4 . E. V. Laitone, *University of California, Berkeley* (34, 9, p. 1941) Technical Note based on AIAA Paper 95-0434

J96-300 Enhancement of the Leading-Edge Separation Vortices by Trailing-Edge Lateral Blowing. Koji Miyaji, *University of Tokyo, Japan*; and Kozo Fujii and Keiichi Karashima, *Institute for Space and Astronautical Science, Japan* (34, 9, p. 1943) Technical Note based on AIAA Paper 94-0181

J96-301 Interface Wavelength Between Supersonic Jets and Subsonic Flowfields. Lawrence J. De Chant, *Texas A&M University*; Jonathan A. Seidel, *NASA Lewis Research Center*; and Malcolm J. Andrews, *Texas A&M University* (34, 9, p. 1946) Technical Note

J96-302 Sound Generation by a Ring Vortex-Shock Wave Interaction. A. P. Szumowski and G. B. Sobieraj, *Warsaw University of Technology, Poland* (34, 9, p. 1948) Technical Note

J96-303 Boundary-Layer Transition Due to Isolated Three-Dimensional Roughness on Airfoil Leading Edge. M. J. Cummings and M. B. Bragg, *University of Illinois at Urbana-Champaign* (34, 9, p. 1949) Technical Note

J96-304 Pressure Fluctuations in an Unstable Confined Jet. Patricia Ern and José Eduardo Wesfreid, *Ecole Supérieure de Physique et Chimie Industrielles, France* (34, 9, p. 1952) Technical Note

J96-305 Kármán Vortex Development: Relation to Symmetry and Circulation of Transition Vortices. C.-K. Chyu and D. Rockwell, *Lehigh University* (34, 9, p. 1954) Technical Note

J96-306 Correlation of Shock Angles Caused by Flat Delta Wings. S. Koide, *Japan Defense Agency* (34, 9, p. 1956) Technical Note

J96-307 Counter-Rotating Structures over a Delta Wing. J. P. Hubner and N. M. Komerath, *Georgia Institute of Technology* (34, 9, p. 1958) Technical Note

J96-308 Three-Dimensional Analysis of Simply Supported Laminated Cylindrical Shells with Arbitrary Thickness. Jianping Zhou and Bingen Yang, *University of Southern California* (34, 9, p. 1960) Technical Note

J96-309 Experimental Investigation on Blade-Stiffened Panel with Stiffener-to-Skin Fiber Stitching. Chen-Wen Chang and Wen-Bin Young, *National Cheng-Kung University, Taiwan, ROC* (34, 9, p. 1964) Technical Note

J96-310 Analytical Model Updating and Model Reduction. R. M. Lin and M. K. Lim, *Nanyang Technological University, Singapore* (34, 9, p. 1966) Technical Note

J96-311 Stochastic Optimization Using the Stochastic Preconditioned Conjugate Gradient Method. David R. Oakley and Robert H. Sues, *Applied Research Associates, Inc.* (34, 9, p. 1969) Technical Note based on AIAA Paper 96-1458 CP952

J96-312 Flowfield Measurements Inside a Boundary-Layer Bleed Slot. D. O. Davis, B. P. Willis, and W. R. Hingst, *NASA Lewis Research Center* (34, 10, p. 1977) Article based on AIAA Paper 95-0032

J96-313 Effect of Fences on Airfoil Aerodynamics at -90° Degree Incidence. Paul M. Stremel, *NASA Ames Research Center* (34, 10, p. 1984) Article

J96-314 Pressure Field Around a Rectangular Supersonic Jet in Screech. Shojiro Kaji and Noriyo Nishijima, *University of Tokyo, Japan* (34, 10, p. 1990) Article based on AIAA Paper 95-020

J96-315 Tone Excitation of a Supersonic Bounded Shear Layer. Mahadevan Ramaswamy and Eric Loth, *University of Illinois at Urbana-Champaign* (34, 10, p. 1997) Article

J96-316 Aeroelastic Stability of a Beam Traveling in a Tunnel Lined with Resonators. Nobumasa Sugimoto, *University of Osaka, Japan* (34, 10, p. 2005) Article

J96-317 Recursive Numerical Algorithm for Conformal Mapping in Two-Dimensional Hydrodynamics. Boris I. Rabinovich and Yury V. Tyurin, *Research and Industrial Association HYDROTUBOPROVOD, Russia*; Arkady A. Livshits, *Technion—Israel Institute of Technology*; and Alexander S. Leviant, *Research and Industrial Association HYDROTUBOPROVOD, Russia* (34, 10, p. 2014) Article

J96-318 Implicit Upwind Residual-Distribution Euler and Navier-Stokes Solver on Unstructured Meshes. E. Issman, G. Degrez, and H. Deconinck, *von Kármán Institute for Fluid Dynamics, Belgium* (34, 10, p. 2021) Article based on AIAA Paper 95-1653 CP956

J96-319 Implicit High-Order Compact Algorithm for Computational Acoustics. K.-Y. Fung, *University of Miami*; Raymond S. O. Man, *University of Arizona*; and Sanford Davis, *NASA Ames Research Center* (34, 10, p. 2029) Article based on AIAA Paper 95-010

J96-320 Accurate Development of Leading-Edge Vortex Using an Embedded Conical Grid. Anand Kumar, *National Aerospace Laboratories, India* (34, 10, p. 2038) Article

- J96-321 Unsteady Flow Calculations with a Multigrid Navier-Stokes Method.** Feng Liu and Shanhong Ji, *University of California, Irvine* (34, 10, p. 2047) Article
- J96-322 Chemical Nonequilibrium Inviscid Flow over a Blunt Cone at Incidence.** M. N. Macrossan and C. Eckett, *University of Queensland, Australia* (34, 10, p. 2054) Article
- J96-323 Large-Scale Structure Evolution in Supersonic Interacting Shear Layers.** N. T. Clemens, S. P. Petullo, and D. S. Dolling, *University of Texas at Austin* (34, 10, p. 2062) Article based on AIAA Paper 93-0545
- J96-324 Nonoscillatory Schemes for Kinetic Model Equations for Gases with Internal Energy States.** J. Y. Yang, *National Taiwan University, ROC*; J. C. Huang and C. S. Wang, *Chung Shan Institute of Science and Technology, Taiwan, ROC* (34, 10, p. 2071) Article
- J96-325 Detailed Mechanism of the Unsteady Combustion Around Hypersonic Projectiles.** Akiko Matsuo, *Keio University, Japan*; and Kozo Fujii, *Institute for Space and Astronautical Science, Japan* (34, 10, p. 2082) Article based on AIAA Paper 95-2565
- J96-326 Higher-Order Numerical Model for Simulation of Time-Dependent Variable-Density Flows.** Jyh-Cheng Sheu and Lea-Der Chen, *University of Iowa* (34, 10, p. 2090) Article
- J96-327 Interaction of Swept and Unswept Normal Shock Waves with Boundary Layers.** L. C. Squire, *Cambridge University, England, UK* (34, 10, p. 2099) Article
- J96-328 Implementation of an Adaptive Piezoelectric Sensor-actuator.** Jeffrey S. Vipperman and Robert L. Clark, *Duke University* (34, 10, p. 2102) Article
- J96-329 Elastic Wave Generation by Piezoceramic Patches.** Mohammad A. Moetakef, Shiv P. Joshi, and Kent L. Lawrence, *University of Texas at Arlington* (34, 10, p. 2110) Article
- J96-330 Governing Equations of a Stiffened Laminated Inhomogeneous Conical Shell.** Zahit Mecitoglu, *Istanbul Technical University, Turkey* (34, 10, p. 2118) Article
- J96-331 Modified Trajectory Method for Practical Global Optimization Problems.** A. A. Groenewold, J. A. Snyman, and N. Stander, *University of Pretoria, South Africa* (34, 10, p. 2126) Article
- J96-332 Integral Formulas for Non-Self-Adjoint Distributed Dynamic Systems.** Bingen Yang, *University of Southern California* (34, 10, p. 2132) Article
- J96-333 Forced Random Parametric Vibration in Single-Degree-of-Freedom Systems.** D. E. Huntington and C. S. Lyrantzis, *San Diego State University* (34, 10, p. 2140) Article
- J96-334 Partitioned Model Reduction for Large Space Structural Control Problem.** Xiaojian Liu and Junjiro Onoda, *Institute of Space and Astronautical Science, Japan* (34, 10, p. 2149) Article
- J96-335 Reliability-Based Optimization: A Proposed Analytical-Experimental Study.** Efstratios Nikolaidis, *Virginia Polytechnic Institute and State University*; and W. Jefferson Stroud, *NASA Langley Research Center* (34, 10, p. 2154) Article based on AIAA Paper 94-1446 CP942
- J96-336 Comparison of Local and Global Approximations for Reliability Estimation.** A. E. Sepulveda, *University of California, Los Angeles*; and H. Jensen, *F. Santa Maria University, Chile* (34, 10, p. 2162) Article based on AIAA Paper 95-1435 CP952
- J96-337 Local Buckling of Cracked and Pin-Loaded Plates.** W. Z. L. Zhuang, J. P. Baird, and H. M. Williamson, *University of New South Wales, Australia* (34, 10, p. 2171) Article
- J96-338 Local Buckling of Delaminated Composite Sandwich Plates.** Chien-Chang Lin and Shou-Hsiung Cheng, *National Chung-Hsing University, PRC*; and James Ting-Shun Wang, *Georgia Institute of Technology* (34, 10, p. 2176) Article
- J96-339 Multiple-Actuator Control of Vortex Breakdown on a Pitching Delta Wing.** Peter Vorobieff and Donald Rockwell, *Lehigh University* (34, 10, p. 2184) Technical Note
- J96-340 Explicit Algebraic Stress Model of Turbulence with Anisotropic Dissipation.** Xiang-Hua Xu and Charles G. Speziale, *Boston University* (34, 10, p. 2186) Technical Note
- J96-341 Numerical Simulation of Viscous Flow over Rotors Using a Distributed Computing Strategy.** Ashok Bangalore, Ralph L. Latham, and Lakshmi N. Sankar, *Georgia Institute of Technology* (34, 10, p. 2189) Technical Note based on AIAA Paper 95-0575
- J96-342 Bow Shock/Jet Interaction in Compressible Transverse Injection Flowfields.** M. R. Gruber and A. S. Nejad, *U.S. Air Force Wright Laboratory*; T. H. Chen, *Taitech, Inc.*; and J. C. Dutton, *University of Illinois at Urbana-Champaign* (34, 10, p. 2191) Technical Note
- J96-343 Proving Algorithm Symmetry for Flows Exhibiting Symmetry Breaking.** Raja Sengupta and Paul D. Orkwis, *University of Cincinnati* (34, 10, p. 2193) Technical Note
- J96-344 Stability of Regular and Mach Reflection Wave Configurations in Steady Flows.** A. Chpoun and D. Passerel, *Centre National de la Recherche Scientifique, France*; and G. Ben-Dor, *Ben-Gurion University of the Negev, Israel* (34, 10, p. 2196) Technical Note
- J96-345 Correlation of Separation Angles Induced by Glancing Interactions.** S. Koide, *Japan Defense Agency*; and N. Saida and R. Ogata, *Aoyama-Gakuin University, Japan* (34, 10, p. 2198) Technical Note
- J96-346 Visualization and Analysis of Bow Shocks in a Supero-orbital Expansion Tube.** Margaret Wegener, Tim McIntyre, Halina Rubinsztajn-Dunlop, Alexis Bishop, Ray Stalker, and Richard Morgan, *University of Queensland, Australia* (34, 10, p. 2200) Technical Note
- J96-347 Accurate Numerical Integration of State-Space Models for Aeroelastic Systems with Free Play.** Mark D. Conner, Lawrence N. Virgin, and Earl H. Dowell, *Duke University* (34, 10, p. 2202) Technical Note
- J96-348 Deflection of Rectangular Orthotropic Plates Under Uniform Load.** James A. August and Shiv P. Joshi, *University of Texas at Arlington* (34, 10, p. 2205) Technical Note
- J96-349 Eigenvector Derivatives with Repeated Eigenvalues Using Generalized Inverse Technique.** Fu-Shang Wei, *Kaman Aerospace Corporation*; and De-Wen Zhang, *Beijing Institute of Structure and Environment, PRC* (34, 10, p. 2206) Technical Note
- J96-350 Distributed Modeling and Actuator Location for Piezoelectric Control Systems.** M. Sunar, *King Fahd University of Petroleum and Minerals, Saudi Arabia*; and S. S. Rao, *Purdue University* (34, 10, p. 2209) Technical Note
- J96-351 Practical Complete Modal Space and Its Applications.** De-Wen Zhang, *Beijing Institute of Structure and Environment Engineering, PRC*; and Fu-Shang Wei, *Kaman Aerospace Corporation* (34, 10, p. 2211) Technical Note
- J96-352 Computation of Derivatives of Repeated Eigenvalues and Corresponding Eigenvectors by Simultaneous Iteration.** Alan L. Andrew, *La Trobe University, Australia*; Roger C. E. Tan, *National University of Singapore* (34, 10, p. 2214) Technical Note

- J96-353 Improvement in Model Reduction Schemes Using the System Equivalent Reduction Expansion Process.** Michael Papadopoulos, and Ephraim Garcia, *Vanderbilt University* (34, 10, p. 2217) Technical Note
- J96-354 Novel Approach to Aerodynamic Analysis Using Analytical/Numerical Matching.** Donald B. Bliss and Ronald J. Epstein, *Duke University* (34, 11, p. 2225) Article
- J96-355 Inverse Aeroacoustic Problem for a Streamlined Body Part I: Basic Formulation.** Sheryl Patrick Grace and Hafiz M. Atassi, *University of Notre Dame*; and William K. Blake, *David Taylor Model Basin* (34, 11, p. 2233) Article
- J96-356 Inverse Aeroacoustic Problem for a Streamlined Body Part 2: Accuracy of Solutions.** Sheryl Patrick Grace and Hafiz M. Atassi, *University of Notre Dame*; and William K. Blake, *David Taylor Model Basin* (34, 11, p. 2241) Article
- J96-357 Computation of Quadrupole Noise Using Acoustic Analogy.** Meng Wang, Sanjiva K. Lele, and Parviz Moin, *Stanford University* (34, 11, p. 2247) Article
- J96-358 Algebraic Turbulence Model Simulations of Supersonic Open-Cavity Flow Physics.** Chung-Jen Tam, Paul D. Orkwis, and Peter J. Disimile, *University of Cincinnati* (34, 11, p. 2255) Article based on AIAA Paper 96-0075
- J96-359 Simulating Turbulent Flow over Thin Element and Flat Valley V-Shaped Riblets.** A. Pollard, *Queen's University at Kensington, Canada*; A. M. Savill, *Cambridge University, England, UK*; and S. Tullis and X. Wang, *Queen's University at Kensington, Canada* (34, 11, p. 2261) Article
- J96-360 Combined Laser Doppler Velocimetry and Cross-Wire Anemometry Analysis for Supersonic Turbulent Flow.** Rodney D. W. Bowersox, *U.S. Air Force Institute of Technology* (34, 11, p. 2269) Article
- J96-361 Parallelization of a Three-Dimensional Flow Solver for Euler Rotorcraft Aerodynamics Predictions.** Andrew M. Wissink, *University of Minnesota*; Anastasios S. Lyrintzis, *Purdue University*; and Roger C. Strawn, *NASA Ames Research Center* (34, 11, p. 2276) Article
- J96-362 Leading-Edge Bluntness Effects in High Enthalpy, Hypersonic Compression Corner Flow.** S. G. Mallinson, S. L. Gai, and N. R. Mudford, *University of New South Wales, England, UK* (34, 11, p. 2284) Article
- J96-363 Application of Turbulence Models for Aerodynamic and Propulsion Flowfields.** Linda D. Kral, Mori Mani, and John A. Ladd, *McDonnell Douglas Aerospace* (34, 11, p. 2291) Article based on AIAA Paper 96-0564
- J96-364 Spatial Evolution of a Monochromatically Forced Flat-Plate Wake.** D. I. Dratler and H. F. Fasel, *University of Arizona* (34, 11, p. 2299) Article
- J96-365 Counterflow Thrust Vectoring of Supersonic Jets.** P. J. Strykowski, *University of Minnesota*; and A. Krothapalli and D. J. Forliti, *Florida A&M University and Florida State University* (34, 11, p. 2306) Article
- J96-366 Efficient Foil Propulsion Through Vortex Control.** Knut Streitlien and George S. Triantafyllou, *City College of the City University of New York*; and Michael S. Triantafyllou, *Massachusetts Institute of Technology* (34, 11, p. 2315) Article
- J96-367 Computational and Experimental Investigations of Rarefied Flows in Small Nozzles.** Iain D. Boyd and Douglas B. VanGilder, *Cornell University*; and Edward J. Beiting, *The Aerospace Corporation* (34, 11, p. 2320) Article
- J96-368 Controlled Leading-Edge Suction for Management of Unsteady Separation over Pitching Airfoils.** Mah'd Alrefai and Mukund Acharya, *Illinois Institute of Technology* (34, 11, p. 2327) Article based on AIAA Paper 95-2188
- J96-369 Large-Eddy Simulations of the Vortex-Pair Breakup in Aircraft Wakes.** D. C. Lewellen and W. S. Lewellen, *West Virginia University* (34, 11, p. 2337) Article
- J96-370 Rayleigh Scattering Technique for Simultaneous Measurements of Velocity and Thermodynamic Properties.** Gregory S. Elliot and Mo Samimy, *Ohio State University* (34, 11, p. 2346) Article
- J96-371 Layerwise Mechanics and Finite Element Model for Laminated Piezoelectric Shells.** Paul Heyliger and K. C. Pei, *Colorado State University*; and Dimitris Saravanos, *Ohio Aerospace Institute* (34, 11, p. 2353) Article
- J96-372 Initial Fatigue Quality Confidence-Interval Approach for Determination of Inspection Intervals.** Andrea Pieracci, *University of Pisa, Italy* (34, 11, p. 2361) Article
- J96-373 Structural Damage Detection Using Real-Time Modal Parameter Identification Algorithm.** Tae W. Lim, *University of Kansas*; Albert Bosse, *Swales and Associates, Inc.*; and Shalom Fisher, *U.S. Naval Research Laboratory* (34, 11, p. 2370) Article
- J96-374 Large Amplitude Free Flexural Vibration of Stiffened Plates.** Abdul Hamid Sheikh, *Bengal Engineering College, India*; and Madhujit Mukhopadhyay, *Indian Institute of Technology, India* (34, 11, p. 2377) Article
- J96-375 Small Displacements About Equilibrium of a Beam Subjected to Large Static Loads.** J. H. Sällström, *Chalmers University of Technology, Sweden*; and D. H. L. Poelaert and F. L. Janssens, *European Space Agency, The Netherlands* (34, 11, p. 2384) Article
- J96-376 Efficient Eigenvector Sensitivities by a New Procedure Based on Lanczos Vectors.** I. U. Ojalvo, *Columbia University*; and L.-M. Zhang, *Nanjing University of Aeronautics and Astronautics, PRC* (34, 11, p. 2392) Article
- J96-377 Primal and Mixed Variational Principles for Dynamics of Spatial Beams.** B. M. Quadrelli and S. N. Atluri, *Georgia Institute of Technology* (34, 11, p. 2395) Article based on AIAA Paper 96-1594 CP962
- J96-378 Maysel's Formula Generalized for Piezoelectric Vibrations: Application to Thin Shells of Revolution.** Hans Irshchik, *Johannes Kepler University of Linz, Austria*; and Franz Ziegler, *Technical University of Vienna, Austria* (34, 11, p. 2402) Article based on AIAA Paper 96-1279
- J96-379 Nonlinear Analysis of Imperfect Metallic and Laminated Cylinders Under Bending Loads.** Xiaozhi Huyan, George J. Simitses, and Ala Tabiei, *University of Cincinnati* (34, 11, p. 2406) Article
- J96-380 Constraint Handling in Genetic Search Using Expression Strategies.** P. Hajela and J. Yoo, *Rensselaer Polytechnic Institute* (34, 11, p. 2414) Article
- J96-381 Nonlinear Dynamic Buckling of a Cylindrical Shell Panel Model.** Anthony N. Kounadis and Dimitris S. Sophianopoulos, *National Technical University of Athens, Greece* (34, 11, p. 2421) Article
- J96-382 Behavior of Heavy Particles in an Acoustically Forced Confined Shear Flow.** E. J. Chang and K. Kailasanath, *U.S. Naval Research Laboratory* (34, 11, p. 2429) Technical Note

- J96-383 Transition Correlation in Flow over a Swept Cylinder.** J. A. Masad, *High Technology Corporation* (34, 11, p. 2431) Technical Note
- J96-384 Simulation of Three-Dimensional Symmetric and Asymmetric Instabilities in Attachment-Line Boundary Layers.** Ronald D. Joslin, *NASA Langley Research Center* (34, 11, p. 2432) Technical Note
- J96-385 Transition Detection with Deposited Hot Films in Cryogenic Tunnels.** Ehud Gartenberg, *Old Dominion University*; Michael A. Scott, *NASA Langley Research Center*; and Scott D. Martinson, *NASA Langley Research Center* (34, 11, p. 2434) Technical Note
- J96-386 Calculation of Flow in Transition Duct Using Second-Order Closure and Wall Functions.** Davor Cokljat, Jonathan G. Carter, and David R. Emerson, *Council for the Central Laboratory of the Research Councils, England, UK* (34, 11, p. 2437) Technical Note
- J96-387 Adaptive Unstructured Grid Generation for Viscous Flow Applications.** David L. Marcum, *Mississippi State University* (34, 11, p. 2440) Technical Note based on AIAA Paper 95-1726 CP956
- J96-388 Improved Jet Coverage Through Vortex Cancellation.** B. A. Haven and M. Kurosaka, *University of Washington* (34, 11, p. 2443) Technical Note
- J96-389 Multiple-Source Schlieren Noise Reduction Measurements.** Terry Ray Salyer and Steven H. Collicott, *Purdue University* (34, 11, p. 2444) Technical Note based on AIAA Paper 94-0279
- J96-390 Drag of Freely Rotatable Cylinder/Splitter-Plate Body at Subcritical Reynolds Number.** John M. Cimbala and Johnathan Leon, *Pennsylvania State University* (34, 11, p. 2446) Technical Note
- J96-391 Interactions of a Vortex with an Oscillating Leading Edge.** R. W. Jeffries and D. Rockwell, *Lehigh University* (34, 11, p. 2448) Technical Note
- J96-392 Vibration Characteristics of Cantilevered Thick Cylindrical Shallow Shells.** K. M. Liew, *Nanyang Technological University, Singapore*; and C. W. Lim and S. Kitipornchai, *University of Queensland, Australia* (34, 11, p. 2451) Technical Note
- J96-393 Relationship of Anisotropic and Isotropic Materials for Antiplane Problems.** Chien-Ching Ma, *National Taiwan University, ROC* (34, 11, p. 2453) Technical Note
- J96-394 Inclusion of Transverse Shear Deformation in Optimum Design of Aircraft Wing Panels.** Phil W. L. Williams, Fred W. Williams, and David Kennedy, *University of Wales, UK* (34, 11, p. 2456) Technical Note
- J96-395 Experimental Studies of Magnetic Levitation Train Aerodynamics.** J. S. Tyll, D. Liu, J. A. Schetz, and J. F. Marchman, *Virginia Polytechnic Institute and State University* (34, 12, p. 2465) Article based on AIAA Paper 95-1917 CP955
- J96-396 Effects of Leading-Edge Lateral Blowing on Delta Wing Aerodynamics.** John S. Hong, *Institute for Defense Analysis*; and Zeki Z. Çelik and Leonard Roberts, *Stanford University* (34, 12, p. 2471) Article
- J96-397 Turbulence Measurements in a Mach 2.9 Boundary Layer Including Mild Pressure Gradients.** Rodney D. W. Bowserox and Thomas A. Buter, *U.S. Air Force Institute of Technology* (34, 12, p. 2479) Article
- J96-398 Space-Time Correlation Measurements in a Hypersonic Transitional Boundary Layer.** Roger L. Kimmel, *U.S. Air Force Wright Laboratory*; Anthony Demetriades, *Montana State University*; and Joseph C. Donaldson, *MicroCraft Technologies*
- J96-399 Stabilization of a Nozzle Boundary Layer by Local Surface Heating.** Anthony Demetriades, *Montana State University* (34, 12, p. 2490) Article
- J96-400 Boundary-Layer Stability Measurements in a Hypersonic Quiet Tunnel.** Jason T. Lachowicz and Ndaona Chokani, *North Carolina State University*; and Stephen P. Wilkinson, *NASA Langley Research Center* (34, 12, p. 2496) Article
- J96-401 Implicit Solution Method for Incompressible Navier-Stokes Equations Including Two-Layer $k-\tau$ Turbulence Model.** Jürg Küffer, Bernhard Müller, and Torstein K. Fanneløp, *Swiss Federal Institute of Technology, Switzerland* (34, 12, p. 2501) Article
- J96-402 Simulation of Turbulent Square-Duct Flow: Dissipation and Small-Scale Motion.** Asmund Huser and Sedat Biringen, *University of Colorado* (34, 12, p. 2509) Article
- J96-403 Cold Gas Simulation of a Solid Propellant Rocket Motor.** D. Couton, F. Plourde, and S. Doan-Kim, *Centre National de la Recherche Scientifique, France* (34, 12, p. 2514) Article
- J96-404 Fountain Flows Produced by Multiple Impinging Jets in a Crossflow.** Jorge M. M. Barata, *Universidade da Beira Interior, Portugal* (34, 12, p. 2523) Article based on AIAA Paper 95-0190
- J96-405 Images of Dissipation Layers to Quantify Mixing Within a Turbulent Jet.** Douglas A. Feikema, David Everest, and James F. Driscoll, *University of Michigan* (34, 12, p. 2531) Article
- J96-406 Dynamics of Isoconcentration Surfaces in Weak Shock Turbulent Mixing Interaction.** L. Vervisch and J. Réveillon, *Institut National des Sciences Appliquées de Rouen, France* (34, 12, p. 2539) Article based on AIAA Paper 96-0517
- J96-407 Computational Study of the Flowfields Associated with Oblique Shock/Vortex Interactions.** Ashish Nedungadi and Mark J. Lewis, *University of Maryland* (34, 12, p. 2545) Article based on AIAA Paper 95-2770
- J96-408 Engineering Estimation of Fluctuating Loads in Shock Wave/Turbulent Boundary-Layer Interactions.** L. Brusniak and D. S. Dolling, *University of Texas at Austin* (34, 12, p. 2554) Article
- J96-409 Second-Order Small-Disturbance Solution for Wing at Supersonic Speeds.** Shijun Luo and Hsien K. Cheng, *University of Southern California* (34, 12, p. 2562) Article based on AIAA Paper 96-2166
- J96-410 Power Dependence of Chemical Oxygen-Iodine Lasers on Iodine Dissociation.** B. D. Barmashenko and S. Rosenwaks, *Ben-Gurion University of the Negev, Israel* (34, 12, p. 2569) Article based on AIAA Paper 95-1924
- J96-411 Tunnel-Induced Gradients and Their Effect on Drag.** J. E. Hackett, *Lockheed Martin Aeronautical Systems Company* (34, 12, p. 2575) Article based on AIAA Paper 96-0562
- J96-412 Modeling Piezoceramic Actuation of Beams in Torsion.** Christopher Park and Inderjit Chopra, *University of Maryland* (34, 12, p. 2582) Article based on AIAA Paper 94-1781 CP942
- J96-413 Effect of Interfacial Imperfection on Buckling and Bending Behavior of Composite Laminates.** Zhen-qiang Cheng, *University of Science and Technology of China*; and D. Kennedy and F. W. Williams, *University of Wales, UK* (34, 12, p. 2590) Article
- J96-414 Nonlinear Analysis of Pressurized Spinning Fiber-Reinforced Tori.** Raouf A. Raouf, *U.S. Naval Academy*; and Anthony

N. Palazotto, *U.S. Air Force Institute of Technology* (34, 12, p. 2596) Article

J96-415 Stress Fields in General Composite Laminates. G. Davi, *University of Palermo, Italy* (34, 12, p. 2604) Article

J96-416 Damage Detection in Beam Structures Using Subspace Rotation Algorithm with Strain Data. K. Kahl and J. S. Sirkis, *University of Maryland* (34, 12, p. 2609) Article

J96-417 Minimum-Rank Optimal Update of Elemental Stiffness Parameters for Structural Damage Identification. Scott W. Doebling, *Los Alamos National Laboratory* (34, 12, p. 2615) Article based on AIAA Paper 96-1307 CP962

J96-418 Vibration Characteristics of Partially Covered Double-Sandwich Cantilever Beam. Qinghua Chen and Cesar Levy, *Florida International University* (34, 12, p. 2622) Article

J96-419 State-Space Modeling of Aerodynamic Forces on Plate Using Singular Value Decomposition. Kenneth D. Framp-ton and Robert L. Clark, *Duke University* (34, 12, p. 2627) Technical Note

J96-420 Modeling Influences of Inlet Swirl Profiles on Dump Combustor Flows. C. H. Lin, C. A. Lin, and J. C. Chen, *National Tsing Hua University, Taiwan, ROC* (34, 12, p. 2630) Technical Note based on AIAA Paper 96-0568

J96-421 Prediction of Aerodynamic Flows with a New Explicit Algebraic Stress Model. Ridha Abid, *High Technology Corporation*; Joseph H. Morrison, *Analytical Services and Materials, Inc.*; Thomas B. Gatski, *NASA Langley Research Center*; and Charles G. Speziale, *Boston University* (34, 12, p. 2632) Technical Note

J96-422 Development of a Rayleigh Scattering Measurement System for Hypersonic Wind-Tunnel Applications. Charles Tyler, *U.S. Air Force Wright Laboratory* (34, 12, p. 2635) Technical Note

J96-423 Vibration and Stability of Simply Supported Elliptical Plates. M. K. Sundareshan, G. Radhakrishnan, and B. Nag-eswara Rao, *Vikram Sarabhai Space Center, India* (34, 12, p. 2637) Technical Note

J96-424 Comment on the Vorticity Jump Across a Shock Wave. Morris P. Isom and Iraj M. Kalkhoran, *Polytechnic University* (34, 12, p. 2640)

Books Reviewed During 1996

Perturbation Methods in the Computer Age, by D. C. Wilcox, *DCW Industries, Inc.* (34, 2, p. 428); reviewed by George Emanuel.

Computational Fluid Dynamics on Parallel Systems, edited by S. Wagner, *Vieweg* (34, 3, p. 644); reviewed by P. L. Roe.

Direct and Large Eddy Simulation I: Selected Papers from the First ERCOFTAC Workshop, edited by P. R. Voke, L. Kleiser, and J.-P. Chollet, *Kluwer Academic Publishers* (34, 4, p. 874); reviewed by Joel H. Ferziger.

Analytical Fluid Dynamics, by George Emanuel, *CRC Press* (34, 4, p. 875); reviewed by Raimo J. Hakkinen.

Fluid Vortices, edited by Sheldon I. Green, *Kluwer Academic Publishers* (34, 4, p. 875); reviewed by Stanley A. Berger.

Random Vibration: Theory and Practice, P. H. Wirsching, T. L. Paez, and K. Ortiz (34, 5, p. 1091); reviewed by Raouf A. Ibrahim.

REAL Computing Made Real, by Forman S. Acton, *Princeton*

University Press (34, 6, p. 1307); reviewed by Gino Moretti.

Vibration Testing: Theory and Practice, by Kenneth G. McConnell, *Wiley* (34, 7, p. 1539); reviewed by William L. Hallauer Jr.

Instrumentation for Flows with Combustion, edited by A.M.K.P. Taylor, *Academic Press* (34, 8, p. 1756); reviewed by David S. Liscinsky.

Mechanical and Structural Vibrations, by Demeter G. Fertis, *Wiley* (34, 9, p. 1972); reviewed by Daniel C. Kammer.

Incompressible Flow, by Ronald L. Panton, *Wiley* (34, 10, p. 2220); reviewed by Doyle Knight.

Mechanics of Liquids and Gases, L. G. Loitsyanskiy, *Begell House, Inc.* (34, 11, p. 2459); reviewed by Paul A. Libby.

An Introduction to Combustion, by Stephen R. Turns, *McGraw-Hill* (34, 12, p. 2645); reviewed by Forman A. Williams

